OPEN FILE REPORT 90-007

LITHOGEOCHEMISTRY OF THE WESTERN PORTION OF THE SOUTH MOUNTAIN BATHOLITH, NOVA SCOTIA N.T.S. MAP SHEETS 21A/3, 21A/4, 21A/5, 21A/6, 21A/11, 21A/12 and 21A/14.

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INTRODUCTION

Geological mapping of the South Mountain Batholith (SMB, Fig. 1) was undertaken from 1984 to 1989 by the Nova Scotia Department of Mines and Energy under the Canada-Nova Scotia Mineral Development Agreement (CNSMDA). Coupled with mapping, a geochemical program was conducted to establish the compositions of individual granitic rock units within the batholith, as determined by field mapping. The lithogeochemical data contained in this Open File Report represent part of this detailed mapping program and include data from the western portion of the batholith mapped in 1988 (Fig. 1). A previously released Open File Report (Open File Report 89-001; Ham et al., 1989) includes the lithogeochemical data from the eastern portion of the South Mountain Batholith and the reader is referred to this report for additional analyses.

METHODOLOGY

One hundred forty-one (141) samples were collected from the western portion of the batholith (National Topographic System (N.T.S.) map sheets 21A/3, 21A/4, 21A/5, 21A/6, 21A/11, 21A/12 and 21A/14). Samples were selected using various criteria: first, to represent the full range of textures and compositions in order to determine local variations of lithological units and, second, to represent uniform coverage geographically in order to determine any regional variations of the units.

The geochemical data are available upon request from the library of the Nova Scotia Department of Mines and Energy at both the Halifax and Stellarton offices. The addresses are:

N.S. Dept. of Mines and Energy
Founders' Square
1701 Hollis Street, 3rd Floor
HALIFAX, Nova Scotia B3J 2X1
(902) 424-8633

N.S. Dept. of Mines and Energy
32 Bridge Avenue
STELLARTON, Pictou County
Nova Scotia B0K 1S0
(902) 752-8429

Floppy disk copies of the geochemical data without the accompanying documentation are available at an additional cost from the library at the Halifax address. The information is in a dBase III file on a double-sided, double density 360K floppy disk.

LITHOLOGIC UNITS

The map units of the South Mountain Batholith are grouped into eight lithologic types based on texture (e.g. equigranular, porphyritic, seriate), grain size (fine = 0.1 cm, medium = 0.1-0.5 cm, coarse = 0.5 cm) and modal percentages of minerals (biotite, muscovite, cordierite and alkali feldspar megacrysts). The eight rock types are: (1) mafic porphyry, (2) granodiorite, (3) biotite monzogranite, (4) muscovite-biotite monzogranite, (5) coarse grained leucomonzogranite, (6) fine- to medium-grained leucomonzogranite, (7) intrusive suite, and (8) leucogranite (see Table 1 for unit abbreviations). Within the western portion of the batholith, intrusive suite (type 7) rocks were not mapped. However, in the eastern portion of the batholith, all units are present. With the exception of mafic porphyry, these eight rock

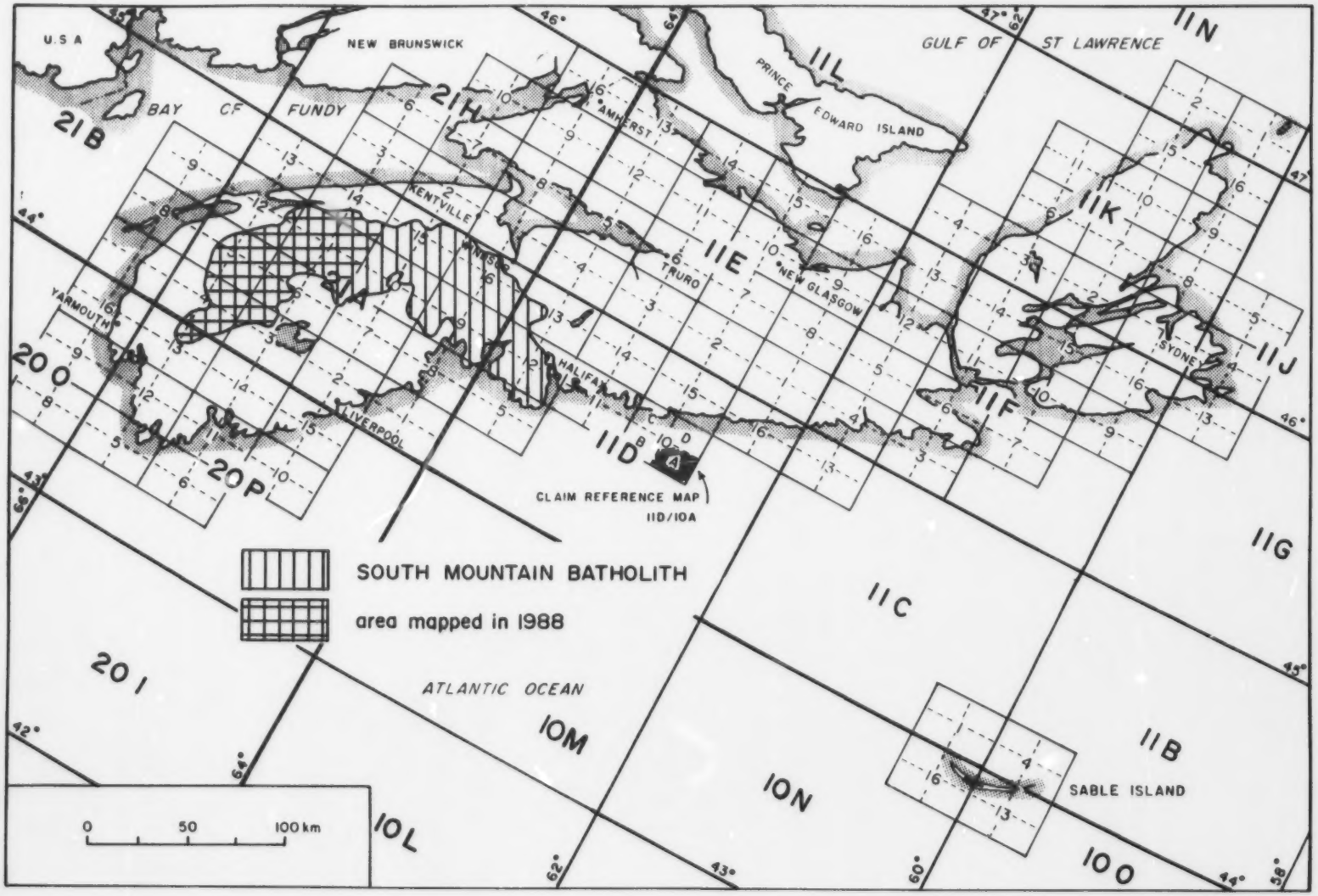

FIGURE 1. Location map showing area of South Mountain Batholith (SMB) mapped in 1988.

types were further subdivided into mappable units with the addition of a place name (see Table 1; e.g. Solomon Lake monzogranite: DCmgSO; Scrag Lake monzogranite: DCmgSG). Where leucogranite (DClm) is listed as the unit in the data tables, the particular sample could have been sampled from a leucomonzogranite dyke within the main body, or the sample could be from a small body or plug of leucomonzogranite which was not given a distinctive name (DClm - leucomonzogranite as opposed to DClmMH - Mickey Hill leucomonzogranite) because of limited exposure. All the lithologic units are illustrated in the sample location maps for the western portion of the South Mountain Batholith (Map 1), the entire South Mountain Batholith (Map 2), and the preliminary geology map of the batholith (Map 3) located in the back pocket.

TABLE 1. Rock type, unit abbreviations and unit names for the western South Mountain Batholith.

ROCK TYPE*	UNIT	UNIT NAME
MAFIC PORPHYRY	DCmgmp	mafic porphyry
GRANODIORITE	DCgd	granodiorite
	DCgdL	Lequille granodiorite
	DCgdRL	Roseway Lake granodiorite
	DCgdSG	Scrag Lake granodiorite
BIOTITE MONZOGRANITE	DCmgCL	Cloud Lake monzogranite
	DCmgLR	Little Round Lake monzogranite
	DCmgSG	Scrag Lake monzogranite
	DCmgTL	Tobeatic Lake monzogranite
MUSCOVITE-BIOTITE MONZOGRANITE	DCmgKJ	Kejimkujik monzogranite
	DCmgSO	Solomon Lake monzogranite (with three variants A, B, C)
	DCmgWD	West Dalhousie monzogranite
COARSE-GRAINED LEUCOMONZOGRANITE	DClmDL	Davis Lake leucomonzogranite
	DClmMR	Morse Road leucomonzogranite
FINE- TO MEDIUM-GRAINED LEUCOMONZOGRANITE	DClm	leucomonzogranite
	DClmBU	Button Brook leucomonzogranite
	DClmDO	Dog Lake leucomonzogranite
	DClmED	East Dalhousie leucomonzogranite
	DClmI	Inglisville leucomonzogranite
	DClmMH	Mickey Hill leucomonzogranite
	DClmSB	Sabeans Lake leucomonzogranite
LEUCOGRANITE	DClgEK	East Kemptville leucogranite

*Units arranged in order of decreasing mafic mineral content. Unit names after Streckeisen (1976) with modifications: leucomonzogranite is a granitoid rock of monzogranitic composition with less than 6% combined mafic minerals, and leucogranite is a granitoid rock with less than 2% combined mafic minerals.

General descriptions of each rock type are presented in Table 2. Repetition of similar units throughout the batholith allows many mappable units to be grouped into one of the eight major rock types, as outlined for the western batholith in Table 1.

Most samples collected and analyzed are unaltered; however, some samples of altered rocks (e.g. hematization, albitization), greisenized rocks, late-stage dyke rocks and quartz veins (both mineralized and unmineralized) were analyzed. The rock units of these latter samples are listed as Grei (greisen), Pegm (pegmatite), Epis (episyenite), Dyke (dyke rock), Vein (Qtz-W) (mineralized quartz vein) and Alt (hematized). A portion of the samples from N.T.S. sheet 21A/14 (those samples numbered A14-C001 to C018) were collected for a B.Sc. thesis (Cormier, 1989) during the 1988 field season and all of these were collected from the Inglisville leucomonzogranite (DClmI). All these are greisenized samples and listed as Grei.

The purpose of this Open File Report is to release the geochemical data and allow readers to use the data and interpret the analyses at their leisure. No interpretation of the geochemical data is attempted in this report for several reasons. In order to do the data justice, extensive data manipulation and statistics must be invoked and this process is time-consuming and cannot be dealt with appropriately in a few pages. The authors are currently preparing several manuscripts that deal with review and interpretation of many aspects of the South Mountain Batholith, including the geochemistry (e.g. Corey et al., in preparation; Horne et al., in preparation; MacDonald et al., in preparation). In these reports, the geochemical data presented here are included, in addition to data from selected areas with more detailed coverage. Several manuscripts have been published in external journals by the authors and deal with selected aspects and areas of the South Mountain Batholith (e.g. Corey and Chatterjee, 1990; MacDonald and Clarke, in press) and the reader is referred to these articles for examples of how the geochemical data are treated.

For additional information and description of the South Mountain Batholith, and results of the mapping, the reader is referred to MacDonald et al. (1987a, 1987b, 1989). For detailed descriptions of each rock unit, the reader is referred to individual 1:50 000 scale Open File Maps produced by the Nova Scotia Department of Mines and Energy. These maps include bedrock geology maps of N.T.S. sheets 21A/3 (Corey and Horne, 1990), 21A/4 (Ham and MacDonald, in preparation), 21A/5 (MacDonald and Ham, 1990), 21A/6 (Horne and Corey, in preparation), 21A/11 (Corey and Horne, 1989), 21A/12 (Ham, 1990) and 21A/14 (MacDonald and Ham, 1989). Additional Open File Maps are also available for the eastern South Mountain Batholith and the reader is referred to Open File Report 89-001 (Ham et al., 1989) for a complete reference list.

SAMPLING PROCEDURE

Approximately 25 kg of material were collected from large outcrop areas to eliminate potential problems with heterogeneity. Some low-lying, glaciated outcrops could not be sampled by conventional methods (chisels and sledge hammers) and were therefore drilled with a Poinjar pack-sack drill and blasted with dynamite to obtain sufficient sample material. In the 21A/4 map area, outcrop was extremely scarce and this paucity necessitated the use of drill core available from Shell Canada Resources and Rio Algom Limited. Approximately 5 kg of BQ drill core were crushed using the following procedure.

Samples were crushed to <2.5 cm fragments. Approximately 4 kg of unaltered material (in the case of drill core samples, all of the unaltered material) were subsequently hand picked to eliminate weathering, fracture-related alteration and xenoliths. This material was ultrasonically cleaned, dried, further crushed to <1 cm, and split to produce a 200 g subsample. This subsample was subsequently pulverized in a shatter box to minus 200 mesh.

QUALITY CONTROL

Samples were analyzed in batches of 20, with individual batches containing one analytical split (duplicate) and two bench standards (STD 1 and STD 2). STD 1 is a medium grained, non-megacrystic biotite granodiorite, which was collected from the Nictaux granite quarry, south of Middleton on N.T.S. map area 21A/14 (Map 1, back pocket). STD 2 is a megacrystic biotite monzogranite which was collected along Highway #103 near the Aspotogan Peninsula on N.T.S. map area 21A/9 (see Fig 1. and refer to Ham et al., 1989 for exact location). Approximately 200 kg of unaltered material were collected from these two locations and crushed according to the above procedure. The analytical precision of all analyses is indicated by the mean values and standard deviations for major and trace element compositions for the two bench standards (Table 3 and Table 4).

ANALYTICAL PROCEDURES

Samples, analytical splits and bench standards were sent to the Nova Scotia Regional X-ray Fluorescence Centre at St. Mary's University, Halifax, for analysis of major oxides (SiO_2, TiO_2, Al_2O_3, Fe_2O_3, MnO, MgO, CaO, Na_2O, K_2O and P_2O_5) and a suite of trace elements (Ba, Rb, Sr, Y, Zr, Nb, Pb, Zn, Cu, V and Ga). The concentrations were determined in a Philips PW-1400 sequential wavelength dispersive X-ray fluorescence spectrometer using a Rh-anode X-ray tube with 2.4 kilowatts of applied power. Fused glass disks were used to determine the major elements and pressed powder pellets were used for trace elements. Loss on ignition (listed as H_2O in the data tables) was determined by heating the sample for 1.5 hours at 1050°C in an electric furnace. Lower detection limit for trace element analysis is 5 ppm, except for Pb (10 ppm).

The same suite of samples was sent to Bondar-Clegg Laboratories in Ottawa and analyzed for the "Au plus 33" geochemical package of elements, from which Hf, Ta, Sc, La, Th, U, As and W values are presented here. Li, F and Sn were additionally analyzed at this laboratory. Methods of analyses and detection limits for individual elements are as follows:

Hf	Neutron Activation	1 ppm
Ta	Neutron Activation	0.5 ppm
Sc	Neutron Activation	0.2 ppm
La	Neutron Activation	2 ppm
Th	Neutron Activation	0.2 ppm
U	Neutron Activation	0.2 ppm
As	Neutron Activation	0.5 ppm
W	Neutron Activation	1 ppm
Li	Atomic Absorption	1 ppm
F	Specific Ion Electrode	20 ppm
Sn	X-ray Fluorescence	1 ppm

Where elements were found in concentrations less than detection limits, values were converted to zero (0) in the geochemical data tables. Similarly, both B and Au were analyzed in the eastern half of the South Mountain Batholith but not analyzed in the western half because of budgetary constraints and unreliable analyses; thus, they are listed as n.a. (not analyzed) in this Open File Report.

RESULTS

The following data tables present element concentrations, normative mineralogy and selected normative ratios and normative indices for all 141 samples. Major element, C.I.P.W. normative calculations (including the quartz-albite-orthoclase ratios as R_Q, R_AB, R_OR,

respectively), degree of alumina oversaturation (A/CNK), Thornton-Tuttle differentiation index (DIFNX), colour index (COLNX), crystallization index (XTLNX) and trace element data are listed in these data tables. Samples are listed in numerical order by 1:50 000 N.T.S. map sheet number and sample locations are shown in Map 1 in the back pocket. The map sheet portion of the sample numbers (e.g. A03-, A11-) has been omitted in the sample location map. Map sheet numbers are plotted in the upper left hand corner of individual sheets. Where more than one sample was taken at the same location, additional sample numbers are also illustrated (e.g. location 0008-3, -4 has two samples, 0008-3 and 0008-4). Each sample has an associated map unit (e.g. DClmDL) or rock type (e.g. Grei). Averages, standard deviations, and minimum and maximum values have been calculated for each lithologic group and the two standards, and are presented in Table 3. Table 4 is a compilation of statistical information for rock units of the entire South Mountain Batholith, incorporating both the eastern portion from Open File Report 89-001 (Ham et al., 1989) and the western portion from this Open File Report.

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TABLE 2. Textural and mineralogical characteristics of rock units of the SMB

ROCK TYPE[1]	SUBUNIT[2]	LITHOLOGY[3]	GRAIN SIZE[4]	TEXTURE	COLOUR	MODAL MINERALOGY (% determined by point counting) BIOTITE	MUSCOVITE	CORDIERITE	GARNET	FELDSPAR MEGACRYSTS[5]	XENOLITHS
GRANODIORITE		granodiorite	m - c	megacrystic	lt - dk grey	12 - 23	0 - tr locally 2%	0 - tr	0 - tr	5 - 15	common to abundant
	S	granodiorite (tonalite)	f - c f - m	slightly megacrystic, seriate	lt - m grey	12 - 20 locally to 30%	0 - tr	0 - tr	0 - tr	0 - 2	common to abundant
	E	granodiorite (tonalite)	f - m	equigranular, slightly porphyritic	m - dk grey	12 - 32	0 - tr	none	none	0 - 2	common to abundant
BIOTITE MONZOGRANITE		monzogranite	m - c f - c	megacrystic	lt - dk grey	10 - 18	0 - 1	0 - tr locally 3%	0 - 1	5 - 30	common to abundant
	S	monzogranite (granodiorite)	f - c	slightly megacrystic, seriate	lt grey	8 - 15	tr locally to 2%	0 - tr locally to 3%	0 - tr	<2 - 5	common
	P	monzogranite	f - m	porphyritic	lt grey	10 - 15	0 - tr	0 - tr	0 - tr	0 - 1	rare
MUSCOVITE-BIOTITE MONZOGRANITE		monzogranite	m - c	megacrystic	lt grey	7 - 13	tr - 2	0 - tr locally 2%	0 - tr	5 - 30	common
	E	monzogranite	f - m	equigranular, seriate, slightly megacrystic	lt grey to buff	7 - 10	tr - 2 locally to 4%	0 - tr	0 - tr	0 - 5	common
	P	monzogranite	f	porphyritic	lt grey	7 - 10	tr - 1	0 - tr	0 - tr		rare
	C	monzogranite	f - c	seriate, megacrystic	lt grey	5 - 8	tr - 2	1 - 4	0 - tr	5 - 20	rare
	M	monzogranite	c	megacrystic	lt grey	4 - 10	tr - 2	tr - 2	none	20 - 40	rare to common
COARSE GRAINED LEUCOMONZOGRANITE		monzogranite	m - c locally fine	megacrystic, slightly porphyritic	lt grey to buff-orange	3 - 7	1 - 4	tr - 2 locally to 5%	0 - tr	5 - 40	rare
	E	monzogranite	m - c	equigranular, slightly porphyritic	lt grey to buff-orange	4 - 7	1 - 4	tr - 2	0 - tr	0 - 10	rare
	C	monzogranite	m - c	seriate, megacrystic	buff-orange	4 - 7	tr - 2	2 - 4	0 - tr	5 - 20	rare
FINE- TO MEDIUM-GRAINED LEUCOMONZOGRANITE		monzogranite (syenogranite)	f - m	texturally variable	lt grey to buff-orange	2 - 7	1 - 5	tr - 1	0 - tr	0 - 5	none
	P	monzogranite (syenogranite)	f - m	porphyritic	lt grey to buff-orange	2 - 8	1 - 6	tr - 2	0 - tr	0 - 5	none
	E	monzogranite (syenogranite)	f - m	equigranular to seriate	lt grey to buff-orange	tr - 6	1 - 5	tr - 2	0 - tr	0 - 2	none
INTRUSIVE SUITES		monzogranite (syenogranite)	f - c	equigranular, seriate, aplitic, pegmatitic, megacrystic	lt grey to buff-orange	2 - 10	tr - 4	tr - 2	tr - 4	0 - 2	none
LEUCOGRANITE		monzogranite (syenogranite)	f - m locally coarse	equigranular, seriate, porphyritic, pegmatitic	lt grey to orange	tr - 2 locally to 5%	2 - 10	tr - 2	0 - tr	0 - 1	none
MAFIC PORPHYRY		monzogranite (granodiorite)	f - m	porphyritic	grey-black	10 - 20	0 - tr	none	0 - tr	0 - 10	common to abundant

1 Units arranged in decreasing mafic mineral content with the exception of mafic porphyry.

2 S = slightly megacrystic, E = equigranular, P = porphyritic, M = megacrystic, C = cordierite-enriched

3 According to the fields of Streckeisen (1976).

4 f - fine grained m - medium grained c - coarse grained
<0.1 cm 0.1 - 0.5 cm 0.5 - 3.0 cm

5 Feldspar megacrysts are mostly alkali feldspar but may also be plagioclase.

TABLE 3. Averages, standard deviations and maximum/minimum values for the six rock types (mafic porphyry not included) and two standards for the western portion of the SMB

UNIT		SiO_2	Al_2O_3	Fe_2O_3	CaO	MgO	Na_2O	K_2O	TiO_2	P_2O_5	MnO	H_2O	Q	OR	AB	AN	C	EN	IL	MT	HT	RU	AP	R_Q	R_AB	R_OR	A_CNK	DIFNX	COLNX	XTLNX
LEUCOGRANITE																														
n=6	AVG	74.26	13.99	1.99	0.29	0.79	3.13	4.10	0.05	0.26	0.05	1.08	30.57	24.49	26.76	0.13	0.61	2.05	0.10	1.92	2.80	0.00	0.55	43.89	29.09	27.01	1.46	90.76	4.14	1.53
	STD	0.59	0.55	1.07	0.10	0.08	1.28	0.19	0.01	0.09	0.03	0.35	7.86	1.08	10.63	0.17	1.70	0.21	0.02	1.06	0.21	0.00	0.21	10.15	11.38	1.60	0.34	2.66	1.19	0.17
	MAX	75.48	14.73	4.57	0.43	0.90	4.37	4.36	0.06	0.36	0.12	1.70	33.15	29.78	37.05	0.41	7.13	2.28	0.12	3.99	2.88	0.01	0.84	62.14	39.56	29.62	2.10	93.65	6.33	1.85
	MIN	73.72	13.05	1.23	0.13	0.68	0.81	3.79	0.03	0.15	0.04	0.70	31.24	22.65	6.95	0.00	2.11	1.63	0.06	1.12	1.65	0.00	0.35	33.36	8.04	25.45	1.11	86.18	2.98	1.40
FINE- TO MEDIUM-GRAINED LEUCOMONZOGRANITE																														
n=5	AVG	74.05	13.93	1.64	0.39	0.98	3.62	4.39	0.10	0.21	0.06	0.88	36.11	26.20	29.24	0.54	3.38	2.21	0.11	1.63	2.21	0.05	0.50	39.45	31.94	28.61	1.26	91.55	3.98	2.09
	STD	0.68	0.45	0.24	0.05	0.07	0.19	0.32	0.05	0.07	0.01	0.33	1.92	1.79	1.64	0.29	0.43	0.16	0.02	0.23	0.16	0.04	0.17	2.15	1.81	1.68	0.04	0.47	0.33	0.25
	MAX	75.21	14.52	2.01	0.45	0.97	3.77	4.77	0.16	0.32	0.09	1.50	38.50	28.39	32.12	0.86	5.92	2.43	0.13	2.02	2.43	0.09	0.75	41.81	34.95	30.09	1.32	92.07	4.58	2.34
	MIN	73.33	13.34	1.34	0.30	0.78	3.24	3.83	0.04	0.13	0.05	0.60	32.99	25.10	27.38	0.14	2.77	1.96	0.08	1.35	1.96	0.00	0.30	39.89	30.11	25.65	1.22	90.73	3.67	1.72
COARSE GRAINED LEUCOMONZOGRANITE																														
n=29	AVG	72.77	14.28	1.97	0.73	0.99	3.53	4.56	0.22	0.21	0.05	0.57	32.43	27.27	30.11	2.27	2.69	2.47	0.10	1.98	2.47	0.17	0.50	36.09	33.46	30.43	1.18	89.81	4.56	4.01
	STD	1.91	0.98	0.44	0.44	0.13	0.80	0.75	0.11	0.07	0.01	0.57	4.16	4.64	7.55	2.23	1.05	0.32	0.02	0.64	0.32	0.11	0.16	4.25	7.81	5.06	0.09	3.18	0.73	2.39
	MAX	75.99	16.28	3.81	2.80	1.38	4.83	5.56	0.62	0.33	0.07	1.20	39.64	32.92	46.95	8.52	4.12	3.45	0.15	3.83	3.45	0.56	0.77	42.90	73.50	37.14	1.37	94.68	7.41	10.95
	MIN	67.99	12.24	1.44	0.12	0.76	2.80	3.84	0.08	0.07	0.03	0.30	19.82	9.84	24.05	0.00	0.00	1.99	0.06	1.44	1.98	0.02	0.16	21.13	26.61	5.38	0.97	80.56	3.42	1.33
MUSCOVITE-BIOTITE MONZOGRANITE																														
n=10	AVG	72.42	14.22	2.31	0.70	1.14	3.22	4.68	0.28	0.19	0.06	0.72	25.34	27.92	27.50	2.25	3.05	2.85	0.13	2.32	2.85	0.22	0.64	37.55	30.98	31.46	1.22	88.75	5.30	4.25
	STD	1.63	0.84	0.63	0.26	0.21	0.24	0.37	0.11	0.05	0.02	0.20	2.23	2.16	2.11	1.19	0.95	0.52	0.04	0.63	0.52	0.10	0.12	2.08	2.23	2.31	0.08	2.79	1.16	1.44
	MAX	76.78	15.59	3.76	1.26	1.55	3.63	5.49	0.48	0.25	0.10	1.10	30.30	32.60	31.11	5.44	4.80	3.98	0.22	3.78	3.98	0.37	0.59	40.43	35.24	37.46	1.39	92.73	7.89	7.64
	MIN	69.54	12.76	1.15	0.29	0.77	2.89	3.99	0.12	0.10	0.04	0.40	20.22	23.78	24.37	0.79	1.30	1.96	0.09	1.56	1.96	0.05	0.23	32.42	27.91	27.38	1.08	82.62	3.83	2.39
BIOTITE MONZOGRANITE																														
n=24	AVG	68.99	14.92	3.96	1.61	1.53	3.20	4.09	0.54	0.29	0.08	0.55	20.82	24.46	27.28	4.78	2.80	3.85	0.17	4.00	3.85	0.45	0.46	36.57	33.49	29.94	1.19	81.50	8.02	9.47
	STD	1.68	0.54	0.65	0.28	0.21	0.37	0.23	0.11	0.02	0.01	0.22	3.51	1.37	3.09	1.30	0.76	0.53	0.03	0.65	0.53	0.10	0.05	4.05	3.92	1.42	0.08	2.24	1.14	1.48
	MAX	72.74	16.08	5.75	2.27	2.01	3.67	4.76	0.82	0.36	0.10	1.10	26.08	28.19	31.54	9.80	5.27	5.11	0.23	5.77	5.11	0.70	0.56	42.55	40.08	33.57	1.44	86.49	10.90	13.21
	MIN	69.79	13.65	2.62	1.05	1.13	2.64	3.60	0.32	0.15	0.05	0.10	23.64	21.97	21.05	4.20	1.72	2.84	0.11	2.66	2.84	0.23	0.35	29.78	26.54	27.84	1.09	76.15	5.63	6.39
GRANODIORITE																														
n=6	AVG	67.23	15.12	4.82	1.95	1.81	3.23	3.75	0.71	0.22	0.10	0.59	20.15	23.60	27.62	6.32	2.76	4.36	0.21	4.87	4.36	0.60	0.51	35.97	35.39	28.65	1.17	78.17	9.64	11.52
	STD	1.76	0.57	0.72	0.31	0.15	0.26	0.18	0.10	0.02	0.02	0.15	3.06	1.06	2.22	1.47	0.55	0.57	0.04	0.73	0.57	0.07	0.05	3.25	3.31	0.69	0.05	2.67	1.11	1.46
	MAX	69.56	15.92	5.84	2.41	1.98	3.63	4.08	0.81	0.24	0.13	0.90	22.70	24.38	31.08	10.49	3.82	4.96	0.28	5.90	4.96	0.68	0.57	41.31	40.40	29.70	1.27	81.82	11.66	13.92
	MIN	66.72	14.18	3.68	1.52	1.57	2.88	3.51	0.51	0.18	0.07	0.40	23.76	20.94	24.76	6.16	2.12	3.06	0.15	3.69	3.96	0.44	0.42	31.68	31.20	27.49	1.11	75.07	7.80	9.22
STANDARD (1)																														
n=4	AVG	67.96	15.94	3.52	2.46	1.64	4.25	2.56	0.38	0.35	0.08	0.53	27.05	15.28	36.32	10.00	2.59	4.13	0.16	3.36	4.13	0.29	0.83	34.36	46.50	19.14	1.13	78.65	7.65	12.89
	STD	1.40	0.75	0.05	0.74	0.15	0.57	1.01	0.00	0.34	0.01	0.18	3.31	5.98	4.95	3.81	1.31	0.39	0.02	0.05	0.39	0.01	0.80	3.69	7.84	6.58	0.06	3.69	0.39	4.04
	MAX	70.32	16.98	3.59	2.91	1.76	5.02	4.30	0.38	0.94	0.09	0.78	30.16	25.64	43.10	13.62	4.51	4.45	0.19	3.42	4.45	0.31	2.21	38.40	56.84	30.18	1.18	84.96	7.99	16.74
	MIN	66.77	14.66	3.26	1.17	1.38	3.42	1.95	0.37	0.14	0.07	0.30	21.81	11.66	29.17	4.66	0.84	3.46	0.15	3.30	3.46	0.27	0.33	28.35	36.34	15.12	1.03	75.58	6.99	7.09
STANDARD (2)																														
n=4	AVG	70.37	14.75	3.37	1.20	1.45	3.35	4.39	0.35	0.19	0.09	0.55	30.08	26.07	28.63	4.72	2.79	3.62	0.19	3.38	3.62	0.28	0.44	35.59	33.59	30.82	1.19	84.57	7.20	7.26
	STD	0.36	0.10	0.01	0.01	0.04	0.41	0.03	0.00	0.01	0.00	0.18	2.40	0.21	3.25	0.03	0.63	0.08	0.00	0.03	0.08	0.00	0.01	3.14	3.58	0.47	0.06	0.69	0.10	0.07
	MAX	70.79	14.83	3.39	1.21	1.51	3.77	4.44	0.39	0.20	0.09	0.80	33.57	26.34	31.86	4.75	3.67	3.74	0.20	3.42	3.74	0.29	0.46	40.15	37.32	31.50	1.28	85.36	7.31	7.33
	MIN	69.81	14.57	3.35	1.19	1.41	2.75	4.36	0.38	0.18	0.09	0.30	27.75	25.76	23.71	4.60	2.15	3.51	0.19	3.35	3.51	0.28	0.42	32.51	28.35	30.17	1.13	83.62	7.04	7.15

Units are listed in decreasing Thornton-Tuttle Differentiation Index (DIFNX)

Explanation: AVG - average, STD - standard deviation, MAX - maximum value, MIN - minimum value, C.I.P.W. norm (wt %) calculations as follows: Q - quartz, OR - orthoclase, AB - albite, AN - anorthite, C - corundum, EN - enstatite, IL - ilmenite, HM - hematite, HY - hypersthene, RU - rutile, AP - apatite, R_Q - ratio quartz, R_AB - ratio albite, R_OR - ratio orthoclase (R_Q+R_AB+R_OR=100%), A_CNK - moles of Al_2O_3/moles ($CaO+Na_2O+K_2O$), DIFNX - Thornton-Tuttle Differentiation Index, COLNX - Colour Index,
XTLNX - Crystallization Index

TABLE 3 (continued).

UNIT		BA	RB	SR	ZR	NB	V	Y	GA	CU	PB	ZN	HF	TA	SC	LA	TH	U	LI	F	AS	SN	W
LEUCOGRANITE																							
N=5	AVG	25.00	946.00	14.40	33.40	24.40	0.00	64.40	27.40	143.40	34.20	106.40	0.00	9.78	2.44	3.40	11.80	27.32	329.00	3899.60	2.26	203.80	18.60
	STD	12.82	284.77	7.26	7.66	1.85	0.00	11.46	2.65	204.57	42.10	38.72	0.00	2.84	0.89	0.49	3.25	3.72	59.26	1293.46	1.46	244.37	11.64
	MAX	50	1227	24	41	26	0	81	32	343	158	162	0.0	13.0	3.5	4	16.0	30.2	376	5600	4.6	683	41
	MIN	14	717	5	19	21	0	50	24	0	0	50	0.0	6.1	1.7	3	7.9	20.3	221	2676	0.7	16	10
FINE- TO MEDIUM-GRAINED LEUCOMONZOGRANITE																							
N=5	AVG	139.60	440.60	23.40	48.80	12.20	3.00	38.60	18.60	2.80	0.00	38.80	1.00	4.36	2.90	7.20	7.92	9.70	132.00	1850.60	5.26	17.40	27.40
	STD	102.91	252.10	14.84	16.88	7.19	3.79	17.96	4.13	3.49	0.00	11.55	1.26	3.20	0.48	1.72	3.83	8.50	114.01	1907.31	5.25	9.95	45.32
	MAX	275	817	40	79	24	9	63	24	8	0	56	3.0	8.7	4.1	10	13.0	25.5	354	5100	12.0	36	118
	MIN	21	211	5	29	5	0	19	14	0	0	28	0.0	1.3	2.3	5	3.7	1.7	38	297	0.0	7	3
COARSE GRAINED LEUCOMONZOGRANITE																							
N=29	AVG	258.09	327.72	56.28	104.84	12.44	9.41	36.28	18.97	1.72	2.47	44.50	2.88	2.33	3.17	17.69	13.16	9.61	100.19	996.97	2.55	12.72	2.81
	STD	186.37	157.04	40.54	42.18	3.65	8.58	14.08	1.93	2.78	8.08	9.74	1.69	1.43	0.91	8.36	4.22	6.70	61.68	706.30	2.22	19.47	3.78
	MAX	740	867	161	242	23	41	70	26	7	37	56	7.0	8.3	6.6	41	22.1	27.2	335	3602	12	117	13
	MIN	25	103	6	45	6	0	19	16	0	0	21	0.0	0.9	1.7	5	5.6	2.6	32	284	0	0	0
MUSCOVITE-BIOTITE MONZOGRANITE																							
N=18	AVG	340.83	305.22	66.72	109.61	12.28	17.83	33.06	18.00	3.61	3.17	49.11	3.11	2.22	3.98	23.28	15.53	9.02	93.61	1161.56	3.51	8.89	8.11
	STD	162.03	122.54	29.76	27.75	2.02	12.48	16.46	1.83	7.37	9.14	11.80	1.10	0.95	1.41	7.94	5.28	7.45	33.33	990.50	2.85	7.77	22.90
	MAX	629	558	118	159	15	43	62	21	30	34	69	6.0	4.2	6.5	40	24.9	24.8	171	3140	10.0	25	102
	MIN	61	191	9	61	8	0	18	15	0	0	30	2.0	1.3	2.0	10	9.7	2.7	36	345	0.0	0	0
BIOTITE MONZOGRANITE																							
N=24	AVG	588.46	162.33	127.67	185.42	11.92	43.71	35.33	17.38	0.00	6.83	61.33	5.88	1.32	8.60	30.88	12.05	3.44	57.54	570.67	6.14	4.46	0.79
	STD	151.39	15.01	21.49	31.22	1.82	14.34	4.10	1.65	0.00	10.00	9.61	1.48	0.23	1.78	5.06	1.79	0.63	11.90	95.13	7.20	3.55	1.08
	MAX	980	189	176	258	16	80	42	21	0	37	85	9.0	1.7	14.0	44	16.0	4.5	86	777	30.0	13	4
	MIN	300	132	74	101	7	21	25	14	0	0	43	3.0	0.9	4.3	18	7.3	2.2	37	334	1.5	0	0
GRANODIORITE																							
N=8	AVG	669.00	150.13	152.63	222.13	12.75	61.63	34.88	18.63	3.13	0.00	75.50	5.88	1.15	10.61	34.38	12.88	3.26	59.38	660.38	14.61	4.50	0.13
	STD	127.18	11.04	19.11	41.42	1.85	9.35	5.40	1.49	6.56	0.00	10.78	1.17	0.13	1.97	5.81	1.05	0.76	12.48	63.84	13.37	3.08	0.33
	MAX	913	174	183	283	16	76	43	21	20	0	96	8.0	1.4	14.0	42	14.0	4.7	81	782	35.0	8	1
	MIN	546	139	130	171	10	47	28	17	0	0	61	4.0	1.0	8.2	27	11.0	2.0	45	590	1.4	0	0
STANDARD (1)																							
N=4	AVG	374.75	106.75	263.50	118.25	9.00	28.50	20.00	16.75	2.00	0.00	46.25	2.50	1.13	4.83	15.75	5.40	2.13	44.75	243.25	2.05	1.50	0.00
	STD	37.50	69.43	91.52	12.50	1.00	3.20	6.96	2.86	3.46	0.00	11.43	0.50	0.08	0.25	0.83	0.20	0.08	1.09	16.65	0.34	1.50	0.00
	MAX	438	227	318	138	10	33	32	20	8	0	66	3.0	1.2	5.2	17	5.6	2.2	46	266	2.6	3	0
	MIN	341	66	105	107	8	24	15	13	0	0	39	2.0	1.0	4.5	15	5.2	2.0	43	219	1.7	0	0
STANDARD (2)																							
N=4	AVG	440.25	227.50	107.25	132.75	9.00	25.00	28.75	17.00	0.00	6.75	68.00	3.25	1.35	5.88	23.00	11.25	2.65	105.00	595.75	2.58	13.00	1.00
	STD	1.92	2.87	0.43	5.67	2.00	3.08	1.09	0.71	0.00	11.69	0.71	0.83	0.15	0.19	0.00	0.43	0.09	4.64	26.48	0.40	2.45	0.71
	MAX	442	232	108	141	11	28	30	18	0	27	69	4.0	1.6	6.2	23	12.0	2.8	111	613	3.2	17	2
	MIN	437	224	107	127	7	21	27	16	0	0	67	2.0	1.2	5.7	23	11.0	2.6	100	550	2.1	11	0

Units are listed in decreasing Thornton-Tuttle Differentiation Index (DIFNX)

Explanation: AVG - average, STD - standard deviation, MAX - maximum value, MIN - minimum value, C.I.P.W. norm (wt %) calculations as follows: Q - quartz, OR - orthoclase, AB - albite, AN - anorthite, C - corundum, EN - enstatite, IL - ilmenite, HM - hypersthene, RU - rutile, AP - apatite, R_Q - ratio quartz, R_AB - ratio albite, R_OR - ratio orthoclase (R_Q+R_AB+R_OR=100%), A_CNK - moles of Al_2O_3/moles ($CaO+Na_2O+K_2O$), DIFNX - Thornton-Tuttle Differentiation Index, COLNX - Colour Index, XTLNX - Crystallization Index

TABLE 4. Averages, standard deviations and maximum/minimum values for the eight rock types and two standards in the complete SMB

UNIT		SiO_2	Al_2O_3	Fe_2O_3	CAO	MGO	Na_2O	K_2O	TiO_2	P_2O_5	MNO	H_2O	Q	OR	AB	AN	C	EN	IL	MN	HY	RU	AP	R_Q	R_AB	R_OR	A_CNK	DIFNX	COLNX	XTLNX
LEUCOGRANITE																														
n=34																														
	AVG	73.62	14.57	1.34	0.39	0.76	3.69	4.10	0.07	0.41	0.04	0.82	35.59	24.44	31.52	0.02	4.08	1.92	0.07	1.33	1.92	0.04	0.97	38.93	34.36	26.70	1.31	91.55	3.35	1.37
	STD	0.89	0.56	0.53	0.14	0.18	0.70	0.42	0.04	0.16	0.02	0.23	3.97	2.52	5.97	0.06	0.88	0.25	0.02	0.52	0.25	0.04	0.38	4.95	6.34	2.78	0.15	1.32	0.68	0.19
	MAX	75.40	15.56	4.07	0.79	1.18	4.86	4.93	0.19	0.76	0.12	1.70	53.55	29.31	41.63	0.41	7.13	2.72	0.12	3.99	2.72	0.16	1.78	62.14	45.13	31.86	2.10	93.65	6.33	1.90
	MIN	71.85	13.05	0.91	0.13	0.60	0.81	3.02	0.01	0.15	0.02	0.20	29.66	17.92	6.95	0.00	2.11	1.51	0.02	0.89	1.51	0.00	0.35	32.16	8.04	19.21	1.11	86.18	2.50	1.06
FINE-GRAINED LEUCOMONZOGRANITE																														
n=105																														
	AVG	73.98	14.26	1.45	0.41	0.85	3.50	4.68	0.13	0.26	0.05	0.64	35.12	26.68	29.82	0.52	3.48	2.12	0.09	1.46	2.12	0.08	0.61	38.34	32.53	29.13	1.26	91.62	3.48	2.01
	STD	1.18	0.47	0.42	0.18	0.22	0.37	0.34	0.08	0.07	0.01	0.21	2.85	1.98	3.11	0.92	0.72	0.55	0.03	0.43	0.55	0.08	0.16	3.05	3.17	2.32	0.07	1.59	0.85	1.10
	MAX	76.08	15.25	2.86	1.31	2.16	4.75	5.30	0.42	0.50	0.09	1.50	44.89	31.54	40.06	5.19	6.66	5.34	0.19	2.88	5.34	0.58	1.19	50.25	42.38	35.59	1.63	94.52	6.76	6.56
	MIN	69.77	12.94	0.54	0.24	0.40	2.23	3.38	0.03	0.12	0.02	0.13	28.17	20.48	19.18	0.00	0.49	1.00	0.04	0.53	1.00	0.00	0.28	29.80	21.67	22.35	1.00	86.02	2.16	0.70
COARSE-GRAINED LEUCOMONZOGRANITE																														
n=96																														
	AVG	73.87	14.25	1.91	0.46	0.93	3.45	4.64	0.20	0.23	0.05	0.54	33.27	27.64	29.30	1.71	2.93	2.34	0.10	1.93	2.34	0.15	0.53	36.83	32.53	30.63	1.20	90.31	4.37	3.35
	STD	1.43	0.69	0.39	0.32	0.15	0.58	0.48	0.08	0.06	0.01	0.18	3.33	2.85	4.96	1.62	0.82	0.37	0.02	0.40	0.37	0.08	0.13	3.44	5.18	3.24	0.07	2.22	0.69	1.79
	MAX	76.36	16.28	3.81	2.08	1.38	8.03	5.56	0.62	0.38	0.08	1.20	39.64	32.92	68.95	8.52	4.15	3.45	0.17	3.83	3.45	0.56	0.88	42.90	73.50	37.14	1.37	94.68	7.41	10.95
	MIN	67.99	12.24	1.11	0.12	0.58	2.80	0.84	0.07	0.07	0.02	0.10	19.82	5.04	23.91	0.00	0.00	1.45	0.04	1.12	1.45	0.02	0.16	21.13	26.61	5.38	0.97	80.56	3.01	1.28
INTRUSIVE SUITE																														
n=23																														
	AVG	73.43	14.26	1.45	0.54	0.97	3.55	4.78	0.14	0.16	0.07	0.62	32.49	28.46	30.24	1.76	2.62	2.42	0.12	1.42	2.42	0.07	0.37	35.50	33.61	31.10	1.19	91.19	4.02	3.64
	STD	2.40	1.47	0.53	0.63	0.23	0.57	0.91	0.09	0.06	0.03	0.29	4.62	5.33	4.95	3.12	0.75	0.57	0.04	0.56	0.57	0.08	0.14	4.54	7.38	5.16	0.06	3.79	1.05	3.30
	MAX	76.37	20.87	2.79	3.38	1.44	5.64	7.84	0.39	0.32	0.19	1.30	36.55	46.08	48.24	15.83	4.36	3.60	0.19	2.80	3.60	0.29	0.75	40.46	63.68	48.65	1.33	94.71	6.60	17.91
	MIN	63.37	13.08	0.70	0.05	0.55	2.37	2.68	0.02	0.09	0.04	0.20	12.68	14.83	19.93	0.00	1.36	1.36	0.04	0.58	1.36	0.00	0.21	16.74	21.04	19.58	1.08	75.75	2.40	0.95
MUSCOVITE-BIOTITE MONZOGRANITE																														
n=62																														
	AVG	71.74	14.51	2.45	0.83	1.16	3.43	4.65	0.32	0.23	0.06	0.63	31.33	27.66	29.22	2.60	2.90	2.90	0.12	2.47	2.90	0.26	0.54	35.53	33.13	31.34	1.19	88.21	5.49	4.63
	STD	1.34	0.57	0.57	0.30	0.19	0.37	0.35	0.10	0.05	0.01	0.18	2.74	2.09	3.04	1.46	0.70	0.48	0.03	0.58	0.48	0.09	0.11	3.01	3.30	2.03	0.06	2.53	1.00	1.66
	MAX	76.70	15.59	3.74	1.73	1.55	4.89	5.49	0.49	0.31	0.10	1.10	36.30	32.60	41.15	7.52	4.80	3.90	0.22	3.78	3.90	0.41	0.73	40.53	45.08	37.44	1.39	92.73	7.89	10.15
	MIN	68.74	12.74	1.55	0.29	0.77	2.89	3.99	0.12	0.10	0.03	0.29	23.71	23.78	24.57	0.49	1.27	1.94	0.06	1.56	1.94	0.05	0.23	25.98	27.91	27.38	1.04	81.91	3.83	2.09
BIOTITE MONZOGRANITE																														
n=113																														
	AVG	69.39	14.84	3.62	1.38	1.68	3.36	4.22	0.49	0.20	0.08	0.58	29.35	25.22	28.70	5.57	2.74	3.71	0.17	3.65	3.71	0.41	0.47	35.25	34.49	30.26	1.18	83.27	7.54	8.17
	STD	1.65	0.44	0.79	0.41	0.26	0.33	0.37	0.13	0.03	0.04	0.20	2.97	2.14	2.75	2.01	0.65	0.65	0.03	0.82	0.65	0.13	0.08	3.29	3.34	1.95	0.06	3.14	1.33	2.29
	MAX	73.09	16.08	5.75	2.27	2.65	4.49	5.32	0.85	0.37	0.50	1.20	36.97	31.97	38.71	9.80	5.27	6.56	0.39	5.77	6.56	0.78	0.87	42.55	43.62	35.97	1.44	90.80	10.99	15.21
	MIN	65.23	13.65	1.76	0.35	0.91	2.46	3.40	0.20	0.12	0.04	0.10	23.36	20.34	21.05	0.47	1.38	2.30	0.09	1.40	2.30	0.00	0.28	27.26	26.54	24.52	1.08	76.15	4.51	2.33
MAFIC PORPHYRY																														
n=6																														
	AVG	68.10	14.95	4.06	1.40	2.13	3.65	3.97	0.59	0.21	0.09	0.76	26.36	23.69	31.13	5.51	2.68	5.31	0.19	4.10	5.31	0.50	0.49	32.48	38.36	29.15	1.17	81.17	9.66	9.29
	STD	2.19	0.61	1.18	0.58	0.70	0.48	0.35	0.21	0.01	0.04	0.22	3.00	2.11	3.93	2.32	1.49	1.71	0.08	1.22	1.71	0.19	0.03	3.49	4.75	1.80	0.12	3.77	1.76	2.83
	MAX	70.13	16.09	6.36	2.32	3.60	4.56	4.35	0.87	0.23	0.17	1.20	30.51	25.92	38.55	9.70	4.65	8.93	0.37	6.49	8.93	0.80	0.54	36.01	48.34	31.50	1.33	86.39	12.25	13.66
	MIN	63.82	14.28	2.50	0.87	1.50	3.16	3.47	0.29	0.20	0.06	0.50	20.57	20.62	27.11	2.99	0.00	3.76	0.13	2.49	3.76	0.21	0.46	25.79	34.03	25.87	0.96	74.61	7.40	5.89
GRANODIORITE																														
n=65																														
	AVG	67.12	15.46	4.57	1.94	1.83	3.45	3.70	0.68	0.21	0.09	0.65	26.89	22.07	29.44	8.30	2.80	4.60	0.19	4.62	4.60	0.58	0.50	34.33	37.55	28.12	1.18	78.41	9.61	11.52
	STD	1.73	0.72	0.81	0.46	0.26	0.45	0.39	0.13	0.03	0.02	0.33	3.16	2.34	3.76	2.27	0.99	0.61	0.05	0.83	0.61	0.11	0.08	4.04	4.65	2.65	0.10	3.11	1.35	2.61
	MAX	70.56	16.70	6.36	3.07	2.56	5.29	4.69	0.94	0.36	0.18	2.48	33.59	27.84	45.13	13.51	9.28	6.43	0.40	6.57	6.43	0.79	0.84	43.68	56.14	37.23	1.85	85.54	13.00	17.25
	MIN	60.85	14.07	2.25	0.88	1.37	2.13	2.64	0.31	0.14	0.06	0.20	16.05	15.74	18.63	2.55	1.42	3.44	0.13	2.27	3.44	0.24	0.33	19.97	25.32	21.75	1.08	72.37	5.83	6.29
STANDARD (1)																														
n=58																														
	AVG	67.83	16.37	3.33	2.62	1.65	4.33	2.04	0.38	0.16	0.07	0.60	27.02	12.18	37.06	13.08	2.31	4.15	0.15	3.36	4.15	0.30	0.38	35.45	48.62	15.93	1.13	76.26	7.67	16.00
	STD	0.78	0.34	0.06	0.27	0.17	0.29	0.37	0.01	0.13	0.00	0.18	1.99	2.22	2.59	1.63	0.64	0.41	0.01	0.07	0.41	0.01	0.30	2.66	3.60	2.35	0.04	1.52	0.39	1.71
	MAX	70.32	16.76	3.48	2.93	2.33	5.02	4.38	0.39	0.94	0.09	1.10	30.38	25.64	43.10	13.98	4.51	5.74	0.19	3.43	5.74	0.32	2.21	40.13	56.04	30.18	1.21	84.96	9.05	17.34
	MIN	65.42	14.66	3.12	1.17	1.38	3.42	1.93	0.37	0.13	0.07	0.20	21.81	11.53	29.17	4.66	0.84	3.46	0.15	3.15	3.46	0.27	0.30	28.35	34.34	15.10	1.03	74.96	6.99	7.09
STANDARD (2)																														
n=38																														
	AVG	70.42	14.56	3.28	1.17	1.34	3.34	4.35	0.37	0.18	0.08	0.58	30.65	25.94	28.48	4.67	2.69	3.37	0.18	3.31	3.37	0.28	0.42	36.05	33.46	30.49	1.19	85.07	6.86	7.65
	STD	0.65	0.14	0.07	0.01	0.13	0.36	0.04	0.01	0.01	0.00	0.19	2.57	0.26	2.99	0.07	0.60	0.32	0.01	0.07	0.32	0.01	0.01	3.22	3.34	0.41	0.06	0.60	0.34	0.22
	MAX	72.05	14.83	3.39	1.21	1.59	4.09	4.44	0.39	0.20	0.09	0.90	41.13	26.48	34.79	4.83	4.79	3.91	0.20	3.48	3.91	0.30	0.46	49.17	40.15	31.50	1.43	86.65	7.46	7.45
	MIN	68.95	14.29	3.07	1.15	1.05	1.98	4.26	0.36	0.17	0.08	0.00	25.93	25.30	16.98	4.54	1.37	2.64	0.17	3.12	2.64	0.27	0.40	29.93	29.30	29.73	1.07	83.62	6.17	6.58

Units are listed in decreasing Thornton-Tuttle Differentiation Index (DIFNX)

Explanation: AVG - average, STD - standard deviation, MAX - maximum value, MIN - minimum value, C.I.P.W. norm (wt %) calculations as follows: Q - quartz, OR - orthoclase, AB - albite, AN - anorthite, C - corundum, EN - enstatite, IL - ilmenite, HM - hematite, HY - hypersthene, RU - rutile, AP - apatite, R_Q - ratio quartz, R_AB - ratio albite, R_OR - ratio orthoclase (R_Q+R_AB+R_OR=100%), A_CNK - moles of Al_2O_3/moles ($CaO+Na_2O+K_2O$), DIFNX - Thornton-Tuttle Differentiation Index, COLNX - Colour Index, XTLNX - Crystallization Index

TABLE 4 (continued).

UNIT		BA	RB	SR	ZR	ND	V	Y	GA	CU	PB	ZN	NF	TA	SC	LA	TH	U	LI	F	AS	SN	W
LEUCOGRANITE																							
n=34																							
	AVG	56.00	641.35	18.62	38.56	22.62	2.24	31.85	27.00	21.59	16.29	67.97	1.26	5.05	2.53	4.44	5.27	7.36	235.85	2549.94	2.50	23.00	35.97
	STD	68.87	256.67	12.50	15.26	7.69	3.30	15.82	4.89	95.35	26.18	36.19	1.09	3.78	0.96	4.98	3.98	8.72	155.25	1372.15	1.30	13.46	116.82
	MAX	283	1227	55	76	38	11	81	37	543	156	190	4.0	14.0	5.8	25	16.0	30.2	540	5600	6.3	48	683
	MIN	0	188	5	16	9	0	12	18	0	0	22	0.0	0.9	1.4	0	1.1	1.7	19	245	0.7	0	2
FINE-GRAINED LEUCOMONZOGRANITE																							
n=125																							
	AVG	145.68	342.93	30.72	59.40	11.75	4.48	22.18	20.61	2.70	18.92	45.15	1.85	2.55	3.15	9.45	6.27	7.87	108.20	1082.12	6.20	18.45	6.56
	STD	145.88	122.95	26.37	27.31	6.24	5.93	7.18	3.35	7.65	7.95	18.18	1.08	1.64	1.84	8.21	4.23	5.50	78.26	992.01	8.44	9.38	12.63
	MAX	591	817	121	156	34	31	63	34	57	42	136	5.0	13.0	7.6	40	23.8	28.6	386	7680	65.5	48	118
	MIN	0	168	0	14	5	0	10	14	0	0	12	0.0	0.7	0.6	0	1.0	1.5	6	105	0.0	1	0
COARSE-GRAINED LEUCOMONZOGRANITE																							
n=94																							
	AVG	216.51	309.83	50.79	89.36	11.92	9.28	29.99	19.18	1.09	10.78	47.79	2.84	2.27	3.12	15.97	11.29	7.42	106.55	1105.49	2.66	14.69	2.89
	STD	134.20	114.17	29.74	31.85	3.15	6.52	12.56	3.33	2.45	10.83	15.81	1.43	1.47	1.07	7.89	4.59	6.11	74.35	880.17	2.33	18.23	3.35
	MAX	740	867	161	242	24	41	70	26	11	37	114	7.0	8.3	6.6	41	22.1	27.2	431	4580	12.0	117	13
	MIN	23	103	6	44	6	0	14	2	0	0	9	0.0	0.9	0.9	5	3.9	2.0	21	150	0.0	0	0
INTRUSIVE SUITE																							
n=23																							
	AVG	173.87	187.04	48.78	58.09	7.17	7.87	17.26	19.35	1.43	23.83	36.57	2.04	1.17	3.36	9.30	4.65	3.80	37.22	265.00	1.58	8.83	1.65
	STD	123.75	39.27	58.61	28.06	2.65	6.35	4.21	2.87	3.79	6.98	12.45	0.95	0.85	1.44	6.44	2.89	2.15	16.27	142.65	1.94	2.74	0.96
	MAX	502	261	296	137	12	22	29	30	16	42	66	5.0	3.3	6.4	30	15.0	10.0	76	500	10.0	15	5
	MIN	5	114	2	25	3	0	11	15	0	14	17	1.0	0.0	0.5	2	0.8	1.4	8	65	0.0	5	1
MUSCOVITE-BIOTITE MONZOGRANITE																							
n=62																							
	AVG	367.82	269.61	75.89	119.27	13.02	19.68	26.50	19.95	2.69	16.77	56.95	3.53	1.86	4.70	23.11	13.49	5.82	90.90	923.60	9.33	9.47	3.89
	STD	113.40	76.39	26.51	23.24	1.85	10.80	10.10	2.66	8.11	13.29	25.42	1.01	0.66	1.50	6.05	4.15	4.69	28.66	616.91	44.87	5.49	13.05
	MAX	629	558	161	183	16	43	62	26	55	83	234	6.0	4.2	8.6	40	26.9	24.8	182	3140	352.0	25	102
	MIN	61	178	9	81	8	0	17	15	0	0	17	1.0	0.7	2.0	9	4.4	1.9	18	345	0.0	0	0
BIOTITE MONZOGRANITE																							
n=113																							
	AVG	512.58	179.04	120.23	144.77	11.51	37.20	33.02	19.02	4.19	16.66	64.81	5.41	1.43	8.51	28.81	11.62	3.69	76.51	603.95	4.49	6.16	1.07
	STD	127.48	29.43	26.15	37.09	1.67	13.50	5.77	2.67	6.36	10.37	14.77	1.44	1.23	2.42	6.11	1.88	1.13	20.91	119.29	4.75	4.12	1.12
	MAX	980	263	1820	258	18	80	50	27	31	50	138	9.0	12.0	14.0	44	16.8	7.6	133	905	30.0	22	6
	MIN	288	132	53	95	7	7	22	13	0	0	34	3.0	0.8	3.5	14	2.5	1.9	10	280	1.0	0	0
MAFIC PORPHYRY																							
n=6																							
	AVG	548.33	186.17	128.33	177.67	11.50	52.00	28.67	20.50	4.00	59.33	184.50	4.67	1.37	9.02	31.00	12.17	3.82	72.00	660.67	5.20	8.33	0.67
	STD	206.96	32.66	31.13	64.60	1.61	24.97	8.44	2.87	3.11	92.97	271.00	1.80	0.20	2.55	9.04	2.67	0.51	21.34	38.50	2.05	5.44	0.47
	MAX	888	220	161	294	14	97	46	26	8	267	790	8.0	1.6	14.0	45	16.8	4.4	95	710	9.0	15	1
	MIN	262	135	89	98	9	20	22	17	0	12	43	3.0	1.1	5.5	16	8.0	2.9	31	590	1.2	0	0
GRANODIORITE																							
n=68																							
	AVG	667.11	149.38	160.40	196.66	12.28	56.08	32.68	20.52	6.55	14.48	78.11	6.28	1.16	10.98	36.86	12.90	2.96	64.17	668.82	4.56	5.32	0.83
	STD	127.80	27.72	31.56	38.32	1.62	14.07	6.76	2.77	6.76	8.84	48.27	1.28	0.29	2.24	6.86	1.57	0.66	26.48	224.93	7.12	3.40	0.69
	MAX	1101	385	256	286	16	106	48	31	35	35	384	10.0	2.6	16.8	51	16.0	4.7	220	2170	35.0	14	3
	MIN	479	91	108	97	8	27	16	16	0	0	43	3.0	0.6	5.7	21	8.4	1.3	33	350	0.0	0	0
STANDARD (1)																							
n=38																							
	AVG	350.92	69.74	309.37	105.97	9.68	28.89	17.21	19.21	2.16	6.11	41.21	2.95	1.09	5.32	17.53	5.78	2.17	47.95	294.95	2.08	4.26	0.74
	STD	15.65	25.95	33.76	6.08	0.95	2.28	2.67	2.36	2.58	5.47	4.80	0.39	0.86	0.45	1.55	0.32	0.18	9.75	40.49	0.24	3.79	0.64
	MAX	438	227	329	138	11	34	32	24	8	28	66	4.0	6.2	6.4	20	6.5	2.7	64	400	2.8	20	2
	MIN	337	62	105	101	8	24	15	13	0	0	35	2.0	0.6	3.9	13	5.2	1.8	27	219	1.7	0	0
STANDARD (2)																							
n=38																							
	AVG	458.26	219.68	107.95	139.58	10.21	25.82	27.74	19.58	0.66	19.29	66.95	3.89	1.34	5.94	24.74	11.58	2.61	115.53	651.39	2.73	13.89	1.11
	STD	6.45	4.68	1.41	3.89	1.45	2.46	2.49	2.23	1.44	6.82	2.66	0.72	0.85	0.61	3.45	1.24	0.95	24.08	58.75	0.33	2.85	0.72
	MAX	451	232	111	145	13	31	33	25	7	38	73	5.0	6.4	7.2	29	13.0	5.0	158	768	4.3	19	3
	MIN	421	212	105	127	7	21	24	16	0	0	48	1.0	0.8	2.9	7	6.9	2.2	56	525	2.1	9	0

Units are listed in decreasing Thornton-Tuttle Differentiation Index (DIFNX)

Explanation: AVG - average, STD - standard deviation, MAX - maximum value, MIN - minimum value, C.I.P.W. norm (wt %) calculations as follows: Q - quartz, OR - orthoclase, AB - albite, AN - anorthite, C - corundum, EN - enstatite, IL - ilmenite, MN - hematite, HY - hypersthene, RU - rutile, AP - apatite, R_Q - ratio quartz, R_AB - ratio albite, R_OR - ratio orthoclase (R_Q+R_AB+R_OR=100%), A_CNK - moles of Al_2O_3/moles ($CaO+Na_2O+K_2O$), DIFNX - Thornton-Tuttle Differentiation Index, COLNX - Colour Index, XTLNX - Crystallization Index

TABLE 5. Geochemical number used in this database compared with drillhole number from Shell Canada Limited and Rio Algom Limited.

NUMBER USED IN SMB GEOCHEMICAL SURVEY	UNIT	DRILLHOLE NUMBER FROM SHELL CANADA LIMITED AND RIO ALGOM LIMITED
A04-1200	DClmDL	79-109
A04-1201	DClgEK	79-114
A04-1202	DClgEK	79-117
A04-1203	DClgEK	79-122
A04-1204	DClmDL	80-21
A04-1205	DClmDL	A-19
A04-1206	DCmgSO-A	82-11
A04-1207	DClmDL	82-12
A04-1208	DClmDL	82-13
A04-1209	DClmDL	82-17
A04-1210	DClmDO	82-22
A04-1211	DClmDO	82-30
A04-1212	DClmDL	82-32
A04-1213	DClmDL	82-36
A04-1214	DCmgSO-C	83-12
A04-1215	DClmDL	83-13A
A04-1216	DCmgSO-B	83-20 51.5 m
A04-1217	DCmgSO-B	83-20 79 m
A04-1218	DCmgSO-B	83-22

SAMPLE	A03-2345-6	A03-2348	A03-2350	A03-2440	A03-2443	A03-3000	A03-3007	A03-3009	A03-3012
UNIT	DC1aDL	DC1a	DC1aDL	DC1a	VEIN (QTZ)	DC1aDL	DC1aDL	DC1aDL	DC1aDL
SIO2	72.58	73.24	72.26	73.03	97.85	72.25	74.07	73.29	73.62
TIO2	0.24	0.22	0.30	0.22	0.01	0.19	0.20	0.21	0.12
AL203	14.44	14.22	15.03	14.71	0.63	15.09	14.03	14.00	13.78
FE203	2.03	1.65	2.31	1.33	1.69	1.88	1.62	1.90	1.56
MNO	0.04	0.05	0.05	0.03	0.01	0.05	0.04	0.04	0.03
MGO	0.96	1.01	1.04	1.02	0.66	0.98	0.89	1.01	0.92
CAO	1.07	0.52	1.11	0.48	0.00	0.59	0.71	0.70	0.41
NA2O	3.31	3.09	3.35	3.46	0.55	3.39	3.20	3.05	3.23
K2O	4.57	4.32	4.57	4.70	0.02	5.21	4.48	4.99	4.96
P2O5	0.20	0.38	0.24	0.38	0.02	0.21	0.20	0.22	0.21
H2O	0.60	0.50	0.40	0.90	0.80	0.40	0.60	0.70	0.50
Q	32.84	37.66	31.93	33.59	92.58	30.49	36.21	34.25	34.58
OR	27.18	25.89	26.96	27.97	0.12	30.87	26.65	29.69	29.68
AB	28.16	26.49	28.27	29.46	3.08	28.73	27.23	25.96	27.65
AN	4.02	0.09	3.93	0.00	0.00	1.55	2.23	2.04	0.67
C	2.59	4.48	3.12	3.95	0.00	3.31	3.12	2.85	2.88
EN	2.40	2.55	2.58	2.56	1.62	2.44	2.23	2.53	2.32
IL	0.09	0.11	0.11	0.06	0.02	0.11	0.09	0.09	0.06
HM	2.04	1.67	2.30	1.34	1.21	1.88	1.63	1.91	1.38
HY	2.40	2.55	2.58	2.56	1.62	2.44	2.23	2.53	2.32
RU	0.20	0.17	0.24	0.19	0.00	0.13	0.16	0.17	0.09
AP	0.47	0.89	0.56	0.89	0.05	0.49	0.47	0.51	0.49
R_Q	37.24	41.83	36.64	36.90	96.66	33.85	40.20	38.10	37.62
R_AB	31.93	29.42	32.43	32.36	3.22	31.89	30.22	28.87	30.08
R_OR	30.82	28.75	30.93	30.73	0.12	34.26	29.58	33.03	32.30
A_CNK	1.17	1.33	1.20	1.26	0.68	1.23	1.23	1.20	1.21
DIFNX	88.19	90.04	87.16	91.02	95.78	90.08	90.09	89.90	91.91
COLNX	4.53	4.33	4.99	3.96	4.17	4.43	3.94	4.53	3.96
XTLNX	5.71	1.88	5.74	1.79	1.14	3.27	3.79	3.82	2.29
BA	262	405	409	424	2062	313	237	275	122
RB	172	193	208	245	0	321	213	240	346
SR	72	52	82	55	12	52	54	54	22
HF	4	1	4	0	0	3	2	3	3
ZR	112	75	134	71	0	102	78	106	67
TA	0.9	1.2	1.5	1.6	0.0	2.2	1.4	1.8	2.2
NB	7	8	10	7	0	13	8	9	12
SC	2.8	3.7	3.7	3.1	0.0	2.7	2.1	2.7	1.7
V	10	11	17	13	0	7	6	10	0
LA	18	12	22	10	0	18	14	17	10
Y	27	17	26	20	0	29	19	29	31
GA	17	16	18	18	0	19	16	17	18
TH	10.0	8.8	12.0	10.0	0.0	12.0	9.5	12.0	10.0
U	6.0	7.1	2.5	8.3	0.0	8.5	16.0	11.0	13.0
LI	42	35	71	25	85	81	65	70	88
F	535	498	543	509	28	410	392	565	659
B	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
AS	1.7	23.0	1.3	0.0	10.0	1.8	1.8	2.0	1.0
AU	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
SN	6	16	8	27	5	15	7	8	10
W	0	4	0	4	0	1	0	1	2
CU	0	0	0	0	0	0	0	0	0
PB	0	0	0	0	0	0	0	0	0
ZN	40	60	45	33	12	56	33	40	38

SAMPLE	A03-3024	A03-3029	A03-3030
UNIT	DC1aDL	DCgdRL	DCgdRL
SIO2	73.53	67.74	67.99
TIO2	0.17	0.74	0.67
AL203	13.71	15.40	15.03
FE203	1.90	4.62	4.28
MNO	0.04	0.10	0.09
MGO	0.96	1.92	1.74
CAO	0.50	1.65	1.52
NA2O	3.54	3.00	3.63
K2O	4.44	3.90	3.91
P2O5	0.27	0.23	0.22
H2O	0.60	0.60	0.90
Q	34.52	29.81	26.92
OR	26.51	23.23	23.34
AB	30.24	25.56	31.00
AN	0.72	6.73	6.16
C	2.84	3.82	2.61
EN	2.41	4.82	4.37
IL	0.09	0.22	0.19
HM	1.92	4.65	4.32
HY	2.41	4.82	4.37
RU	0.13	0.63	0.57
AP	0.63	0.54	0.52
R_Q	37.82	37.93	33.12
R_AB	33.13	32.52	38.15
R_OR	29.05	29.55	28.73
A_CNK	1.19	1.27	1.16
DIFNX	91.26	78.60	81.26
COLNX	4.42	9.68	8.89
XTLNX	2.41	10.10	9.22
BA	134	601	557
RB	388	159	174
SR	24	151	134
HF	2	5	5
ZR	86	187	189
TA	2.6	1.2	1.1
NB	15	11	11
SC	2.3	9.5	8.9
V	7	63	47
LA	12	27	28
Y	37	30	32
GA	21	17	19
TH	12.0	12.0	12.0
U	13.0	3.8	3.0
LI	137	69	69
F	1361	591	608
B	n.a.	n.a.	n.a.
AS	1.3	1.5	1.4
AU	n.a.	n.a.	n.a.
SN	15	3	8
W	3	0	0
CU	0	0	20
PB	0	0	0
ZN	55	65	69

SAMPLE	A04-1050	A04-1052	A04-1053	A04-1054	A04-1061	A04-1200	A04-1201	A04-1202	A04-1203
UNIT	DC1aDL	DC1aDL	DC1aDL	DC1gEK	DC1gEK	DC1aDL	DC1gEK	DC1gEK	DC1gEK
SIO2	75.97	74.37	73.72	73.92	75.40	74.33	74.19	73.72	74.06
TIO2	0.11	0.12	0.22	0.03	0.05	0.08	0.06	0.06	0.06
AL2O3	13.30	13.94	13.74	14.73	13.05	13.83	13.93	14.25	14.00
FE2O3	1.44	1.53	2.03	1.23	4.07	1.75	1.30	1.87	1.46
MNO	0.04	0.05	0.04	0.08	0.10	0.05	0.04	0.12	0.07
MGO	0.76	0.81	1.00	0.65	0.82	0.86	0.80	0.90	0.80
CAO	0.28	0.43	0.50	0.28	0.13	0.12	0.43	0.30	0.31
NA2O	3.32	3.58	3.18	4.22	0.81	2.85	4.37	2.99	3.24
K2O	4.16	4.62	4.66	3.97	4.30	4.82	4.28	3.79	4.15
P2O5	0.33	0.29	0.25	0.15	0.15	0.12	0.36	0.19	0.33
H2O	0.40	0.60	0.50	0.80	1.70	1.20	0.70	1.10	1.10
Q	39.64	34.63	35.75	33.27	53.55	38.45	31.24	41.11	38.66
OR	24.64	27.40	27.75	23.66	25.70	28.84	25.37	22.83	24.89
AB	28.13	30.37	27.08	35.97	6.93	24.39	37.05	25.76	27.80
AN	0.00	0.24	0.85	0.41	0.00	0.00	0.00	0.25	0.00
C	3.34	2.97	3.17	3.36	7.13	3.97	2.11	5.23	4.23
EN	1.90	2.02	2.51	1.63	2.06	2.17	2.00	2.28	2.02
IL	0.09	0.11	0.09	0.06	0.10	0.11	0.09	0.12	0.12
HM	1.44	1.53	2.04	1.12	3.99	1.77	1.30	1.75	1.44
HY	1.90	2.02	2.51	1.63	2.06	2.17	2.00	2.28	2.02
RU	0.07	0.06	0.18	0.00	0.00	0.02	0.01	0.00	0.00
AP	0.77	0.67	0.58	0.35	0.35	0.28	0.84	0.45	0.78
R_Q	42.90	37.48	39.47	35.81	62.14	41.93	33.36	45.83	42.32
R_AB	30.44	32.87	29.90	38.72	8.04	26.61	39.56	28.72	30.43
R_OR	26.66	29.65	30.63	25.47	29.82	31.46	27.08	25.45	27.25
A_CNK	1.27	1.19	1.23	1.25	2.10	1.37	1.11	1.49	1.35
DIFNX	92.41	92.40	90.58	92.89	86.18	91.68	93.65	89.70	91.36
COLNX	3.42	3.66	4.64	2.98	6.33	4.05	3.38	4.37	3.63
XTLNX	1.33	1.65	2.61	1.55	1.45	1.52	1.40	1.85	1.42
BA	25	87	166	19	50	53	19	14	23
RB	579	393	341	1109	1227	867	717	958	719
SR	6	24	32	5	7	6	19	17	24
HF	0	0	2	0	0	0	0	0	0
ZR	47	45	90	19	36	56	38	33	41
TA	4.9	3.2	2.1	13.0	10.0	8.3	6.1	13.0	6.8
NB	19	13	13	26	21	23	25	24	26
SC	2.4	2.7	2.9	2.7	2.7	3.4	1.7	3.5	1.7
V	0	0	14	0	0	0	0	0	0
LA	5	7	14	3	4	6	3	4	3
Y	40	29	32	68	81	68	50	70	53
GA	21	19	18	32	28	26	24	27	26
TH	7.5	5.6	10.0	13.0	16.0	18.0	7.9	14.0	8.1
U	16.0	6.9	6.2	20.3	29.2	27.2	30.2	27.7	30.2
LI	269	120	74	371	368	335	221	309	376
F	2400	1401	701	5340	3120	3602	2762	5600	2676
B	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
AS	2.3	4.1	1.7	0.7	1.8	2.7	3.2	1.0	4.6
AU	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
SN	26	18	12	16	683	117	66	165	89
W	8	6	13	41	11	11	10	19	12
CU	0	0	0	0	543	0	12	37	125
PB	0	0	0	0	158	0	0	0	13
ZN	53	50	52	50	115	45	75	162	120

SAMPLE	A04-1204	A04-1205	A04-1206	A04-1207	A04-1208	A04-1209	A04-1210	A04-1211	A04-1212
UNIT	DCIaDL	DCIaDL	DCagSO-A	DCIaDL	DCIaDL	DCIaDL	DCIaDD	DCIaDD	DCIaDL
SIO2	74.85	71.03	72.57	75.99	73.21	75.68	75.21	73.43	74.62
TIO2	0.12	0.16	0.33	0.14	0.19	0.10	0.05	0.04	0.11
AL203	12.77	15.23	13.50	12.24	13.60	12.57	13.36	14.00	13.09
FE203	1.74	1.81	2.54	1.71	2.10	1.48	1.59	1.82	1.85
MNO	0.05	0.03	0.07	0.05	0.07	0.05	0.06	0.09	0.04
MGO	0.93	1.06	1.25	0.89	1.05	0.86	0.78	0.83	0.85
CAO	0.34	0.18	1.26	0.51	0.75	0.39	0.38	0.40	0.35
NA2O	4.27	8.03	3.59	3.63	4.17	3.76	3.28	3.47	3.12
K2O	5.05	0.84	3.99	4.50	4.33	4.51	4.29	3.83	5.02
P2O5	0.08	0.15	0.13	0.07	0.07	0.07	0.16	0.18	0.18
H2O	0.60	0.60	0.60	0.40	0.40	0.70	0.90	1.50	0.60
Q	28.81	19.82	32.46	35.51	29.53	34.80	38.50	37.71	36.01
OR	29.81	5.04	23.78	26.69	25.73	26.82	25.59	23.10	29.92
AB	36.06	68.95	30.61	30.80	35.44	31.98	27.99	29.93	26.60
AN	0.75	0.00	5.44	2.08	3.28	1.48	0.84	0.82	0.56
C	0.00	1.13	1.30	0.64	0.86	0.96	3.04	3.92	2.33
EN	2.16	2.68	3.14	2.22	2.63	2.15	1.96	2.11	2.13
IL	0.11	0.07	0.15	0.11	0.15	0.11	0.10	0.08	0.09
HM	1.74	1.84	2.56	1.71	2.11	1.49	1.57	1.73	1.86
HY	2.16	2.68	3.14	2.22	2.63	2.15	1.96	2.11	2.13
RU	0.06	0.13	0.25	0.08	0.11	0.04	0.00	0.00	0.07
AP	0.19	0.35	0.30	0.16	0.16	0.16	0.37	0.43	0.42
R_Q	30.43	21.13	37.37	38.19	32.56	37.18	41.81	41.56	38.91
R_AB	38.08	73.50	35.24	33.12	39.08	34.17	30.40	32.99	28.75
R_OR	31.49	5.38	27.38	28.70	28.37	28.65	27.79	25.45	32.34
A_CNK	0.97	1.05	1.08	1.04	1.05	1.07	1.25	1.32	1.17
DIFNX	94.68	93.81	86.85	93.00	90.70	93.60	92.07	90.73	92.54
COLNX	4.33	4.58	5.85	4.04	4.89	3.75	3.67	4.10	4.08
XTLNX	2.59	1.88	7.64	3.64	5.12	2.99	2.22	2.30	2.06
BA	71	23	210	65	219	63	27	21	78
RB	562	103	441	400	420	499	670	817	478
SR	21	43	60	29	30	10	6	5	11
HF	2	4	3	2	3	2	0	0	2
ZR	72	132	127	92	101	74	39	29	79
TA	3.2	2.9	3.1	2.2	3.0	2.7	7.8	8.7	2.9
NB	11	16	15	10	12	11	24	17	14
SC	3.7	3.0	4.5	3.6	4.4	3.7	2.3	2.6	1.9
V	6	0	22	5	13	0	0	0	0
LA	14	19	22	15	21	14	6	5	10
Y	70	26	62	64	66	62	56	63	49
GA	18	20	18	19	20	18	23	24	22
TH	20.2	22.1	18.0	18.0	21.4	18.0	13.0	12.0	14.0
U	23.0	7.4	15.0	18.0	13.0	20.0	11.0	25.5	12.0
LI	130	32	171	82	118	144	120	354	137
F	2180	264	2972	1065	1599	1539	2968	5100	1561
B	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
AS	0.7	0.0	4.0	1.3	3.6	12.0	0.0	0.0	2.3
AU	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
SN	4	17	9	5	7	12	36	18	13
W	13	1	102	4	4	4	7	118	4
CU	6	0	8	7	5	6	6	8	6
PB	0	0	0	0	0	0	0	0	0
ZN	29	21	42	28	35	26	49	56	54

SAMPLE	A04-1213	A04-1214	A04-1215	A04-1216	A04-1217	A04-1218	A04-3000	A04-3005
UNIT	DClaDL	DCagSO-C	DClaDL	DCagSO-B	DCagSO-B	DCagSO-B	DClaDL	DClaDL
SIO2	73.56	72.18	74.23	73.97	74.64	74.70	71.25	74.12
TIO2	0.17	0.26	0.15	0.12	0.12	0.12	0.28	0.12
AL2O3	13.79	13.68	12.90	12.97	12.74	12.97	15.02	14.18
FE2O3	1.76	2.48	1.82	1.90	1.94	1.74	2.17	1.50
MNO	0.05	0.07	0.06	0.05	0.04	0.06	0.05	0.04
MGO	1.06	1.16	0.90	1.05	0.90	0.77	1.00	0.81
CAO	0.42	0.68	0.33	0.36	0.29	0.41	1.05	0.40
NA2O	2.80	3.62	3.75	3.63	3.38	3.50	3.62	3.22
K2O	4.64	4.64	4.12	4.57	4.56	4.58	4.92	4.43
P2O5	0.26	0.17	0.27	0.10	0.10	0.10	0.29	0.33
H2O	0.70	1.10	0.80	0.70	0.70	0.80	0.50	0.60
Q	38.32	30.97	35.81	33.73	36.30	35.42	28.52	37.52
OR	27.86	27.74	24.73	27.38	27.32	27.38	29.20	26.42
AB	24.05	30.96	32.19	31.11	28.97	29.93	30.74	27.47
AN	0.39	2.28	0.00	1.15	0.79	1.39	3.32	0.00
C	4.08	1.89	2.30	1.65	1.98	1.76	2.53	4.12
EN	2.68	2.92	2.27	2.65	2.27	1.94	2.50	2.03
IL	0.11	0.15	0.13	0.11	0.09	0.13	0.11	0.09
HM	1.79	2.51	1.85	1.92	1.97	1.76	2.18	1.51
HY	2.68	2.92	2.27	2.65	2.27	1.94	2.50	2.03
RU	0.12	0.18	0.08	0.06	0.08	0.05	0.22	0.08
AP	0.61	0.40	0.64	0.23	0.24	0.23	0.68	0.77
R_Q	42.47	34.54	38.62	36.57	39.20	38.20	32.24	41.05
R_AB	26.65	34.52	34.72	33.74	31.29	32.27	34.74	30.05
R_OR	30.88	30.94	26.67	29.69	29.51	29.52	33.01	28.90
A_CNK	1.33	1.12	1.15	1.12	1.16	1.13	1.14	1.31
DIFNX	90.23	89.67	92.73	92.22	92.59	92.73	88.46	91.40
COLNX	4.57	5.58	4.25	4.68	4.32	3.83	4.78	3.63
XTLNX	2.27	4.33	1.59	3.00	2.39	2.75	5.07	1.43
BA	203	318	61	68	97	61	432	98
RB	306	431	484	515	528	558	234	409
SR	50	58	15	19	17	9	93	24
HF	3	2	0	2	3	2	4	0
ZR	84	115	73	75	76	83	132	46
TA	2.2	2.7	3.8	4.1	4.0	4.2	1.0	3.3
NB	11	14	20	14	14	14	10	14
SC	2.6	4.8	2.5	3.2	3.7	3.5	3.2	2.9
V	7	28	5	7	7	0	12	0
LA	13	19	7	13	15	13	22	6
Y	34	54	41	58	61	60	33	27
GA	20	20	21	20	21	20	18	19
TH	9.1	18.0	11.0	18.0	18.0	18.0	10.0	5.8
U	6.4	14.0	21.2	24.8	23.7	23.7	4.1	7.1
LI	59	142	143	107	122	136	63	126
F	506	3140	1741	2356	1908	3056	596	1052
B	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
AS	3.1	1.1	0.0	0.9	3.7	0.0	2.2	1.5
AU	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
SN	4	22	11	15	25	25	4	15
W	0	5	6	8	6	7	0	5
CU	7	30	7	7	10	10	0	0
PB	0	0	0	0	0	0	0	0
ZN	56	57	39	35	33	33	47	45

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SAMPLE	A05-0014	A05-0039	A05-1006	A05-1018	A05-802B
UNIT	DC1aDL	DC1aDL	DC1aDL	DC1aDL	DC1aDL
SIO2	70.30	68.66	67.99	70.13	71.25
TIO2	0.31	0.42	0.62	0.34	0.28
AL203	15.21	16.28	15.77	15.72	15.05
FE203	2.33	2.67	3.81	2.43	1.95
MNO	0.05	0.05	0.06	0.04	0.04
MGO	1.09	1.15	1.38	1.09	0.92
CAO	1.38	1.85	2.00	1.47	1.10
NA2O	3.08	3.31	3.47	3.13	3.22
K2O	4.50	4.24	4.18	4.94	4.84
P2O5	0.22	0.19	0.22	0.23	0.31
H2O	0.70	0.70	0.30	0.40	0.60
Q	31.67	28.36	26.20	29.01	31.45
OR	27.03	25.38	24.85	29.36	28.93
AB	26.46	28.34	29.51	26.61	27.53
AN	5.49	8.03	8.52	5.82	3.46
C	3.34	3.37	2.44	3.11	3.29
EN	2.76	2.90	3.45	2.73	2.32
IL	0.11	0.11	0.13	0.09	0.09
HM	2.37	2.70	3.83	2.44	1.97
HY	2.76	2.90	3.45	2.73	2.32
RU	0.26	0.37	0.56	0.30	0.24
AP	0.52	0.45	0.51	0.54	0.73
R_Q	37.19	34.55	32.53	34.14	35.78
R_AB	31.07	34.53	36.63	31.31	31.32
R_OR	31.74	30.92	30.85	34.55	32.91
A_CNK	1.22	1.22	1.14	1.19	1.20
DIFNI	85.16	82.08	80.56	84.98	87.91
COLNI	5.23	5.71	7.41	5.26	4.37
XTLNI	7.42	10.06	10.95	7.73	5.09
BA	447	662	740	528	431
RB	204	144	144	192	172
SR	104	156	161	117	96
HF	4	6	7	5	4
ZR	144	192	242	172	132
TA	1.5	1.0	0.9	1.4	1.0
NB	9	11	12	10	9
SC	3.9	4.5	6.6	3.7	2.8
V	13	24	41	18	14
LA	25	33	41	27	23
Y	31	31	37	34	27
GA	19	19	19	17	17
TH	12.0	14.0	18.0	13.0	12.0
U	2.6	2.4	2.8	2.4	4.0
LI	56	43	56	56	65
F	806	522	736	765	404
B	n.a.	n.a.	n.a.	n.a.	n.a.
AS	2.1	1.7	1.8	1.9	2.2
AU	n.a.	n.a.	n.a.	n.a.	n.a.
SN	10	7	0	6	3
W	0	0	0	0	0
CU	0	0	0	0	0
PB	0	0	0	0	0
ZN	43	49	56	50	39

SAMPLE	A06-2328	A06-3007	A06-3010-1	A06-3015	A06-3015-1	A06-3017	A06-3021	A06-3025	A06-3030
UNIT	DClaDL	DCagKJ	DCagKJ	DCagSG	DCagSG	DCagSG	DCagKJ	DClaDL	DCagSG
SIO2	71.65	69.56	69.54	68.23	69.77	68.41	70.59	71.33	70.07
TIO2	0.27	0.48	0.46	0.43	0.50	0.51	0.44	0.24	0.33
AL203	15.03	15.22	15.17	16.08	14.27	14.97	15.07	14.27	14.62
FE203	2.21	3.74	3.34	2.62	3.70	3.87	3.35	1.88	3.91
MNO	0.05	0.10	0.09	0.05	0.08	0.08	0.09	0.04	0.07
MGO	1.07	1.55	1.46	1.13	1.49	1.48	1.45	1.13	1.47
CAO	0.99	1.12	1.04	1.84	1.57	1.45	0.67	1.04	1.62
NA2O	3.34	2.95	3.27	3.67	3.22	3.28	3.05	4.06	3.31
K2O	4.91	4.08	4.49	4.21	3.79	4.39	4.29	4.90	4.06
P2O5	0.24	0.24	0.23	0.19	0.18	0.20	0.24	0.21	0.20
H2O	0.40	0.80	0.60	0.80	0.70	0.60	1.10	0.30	0.50
Q	30.45	33.06	29.84	26.07	31.90	28.15	33.75	25.86	30.20
OR	29.11	24.37	26.80	25.29	22.74	26.32	25.57	29.25	24.04
AB	28.33	25.20	27.92	31.54	27.64	28.13	26.00	34.66	28.04
AN	3.35	4.02	3.69	8.01	6.71	5.97	1.77	3.82	6.74
C	3.00	4.53	3.62	2.63	2.48	2.70	4.80	0.90	2.31
EN	2.67	3.90	3.67	2.86	3.76	3.74	3.64	2.84	3.67
IL	0.11	0.22	0.19	0.11	0.17	0.17	0.19	0.09	0.15
HM	2.22	3.78	3.37	2.66	3.75	3.92	3.38	1.90	3.91
HY	2.67	3.90	3.67	2.86	3.76	3.74	3.64	2.84	3.67
RU	0.21	0.37	0.36	0.38	0.42	0.43	0.34	0.20	0.47
AP	0.56	0.56	0.54	0.45	0.42	0.47	0.56	0.49	0.46
R_Q	34.64	40.01	35.28	31.44	38.77	34.08	39.56	28.80	36.70
R_AB	32.23	30.50	33.02	38.04	33.59	34.06	30.48	38.61	34.08
R_OR	33.13	29.49	31.70	30.51	27.64	31.87	29.97	32.58	29.22
A_CNK	1.19	1.35	1.25	1.15	1.16	1.17	1.39	1.03	1.14
DIFNX	87.89	82.62	84.56	82.90	82.28	82.61	85.32	89.77	82.28
COLNX	4.99	7.89	7.23	5.63	7.69	7.83	7.21	4.82	7.73
XTLNX	5.22	6.76	6.26	10.01	9.34	8.58	4.32	5.81	9.30
BA	374	509	629	655	372	610	531	339	567
RB	260	191	192	142	147	172	204	220	149
SR	71	109	118	157	109	116	96	77	119
HF	3	4	4	5	4	5	4	4	5
ZR	113	159	147	193	170	174	139	111	173
TA	1.6	1.4	1.4	0.9	1.7	1.2	2.2	1.1	1.4
NB	12	10	10	10	11	11	10	6	11
SC	3.4	6.5	6.4	4.3	7.5	7.7	6.0	2.8	9.0
V	19	43	41	30	39	33	39	15	45
LA	19	28	28	32	27	27	26	20	29
Y	28	28	28	35	38	36	26	30	34
GA	18	18	16	19	17	16	18	16	17
TH	11.0	11.0	11.0	14.0	10.0	11.0	11.0	12.0	11.0
U	4.4	2.7	4.3	2.3	4.0	4.5	7.4	2.9	3.3
LI	100	77	69	41	60	62	81	82	49
F	765	622	485	595	506	617	494	618	520
B	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
AS	2.1	0.9	1.2	1.7	2.1	2.6	2.7	2.0	2.2
AU	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
SN	9	0	3	4	3	2	6	4	0
W	1	0	0	0	0	0	3	0	1
CU	0	0	0	0	0	0	0	6	0
PB	0	0	0	0	0	0	0	0	0
ZN	46	69	58	52	55	57	48	37	57

SAMPLE	A11-2239	A11-2249	A11-2257	A11-2259	A11-2262-1	A11-2262-2	A11-2267	A11-2268	A11-2270-B
UNIT	DCagWD	DCagWD	DYKE	DCagWD	DCla	DCla	DCgdSG	DClaMH	DCgdL
SIO2	73.01	72.62	75.78	73.34	72.89	74.14	68.37	74.26	64.72
TIO2	0.29	0.23	0.03	0.21	0.16	0.09	0.67	0.16	0.81
AL2O3	14.02	14.55	14.47	14.13	14.82	14.60	14.95	13.48	15.92
FE2O3	1.88	1.87	0.62	1.89	1.28	1.18	4.37	2.01	5.70
MNO	0.04	0.04	0.03	0.04	0.03	0.04	0.08	0.06	0.13
MGO	0.93	1.17	0.76	1.05	0.96	0.82	1.68	0.97	1.96
CAO	0.63	0.54	0.28	0.45	0.47	0.40	2.02	0.30	2.07
NA2O	2.94	3.30	3.92	3.09	3.12	3.48	2.96	3.24	3.33
K2O	4.97	5.00	3.22	4.97	4.90	4.37	3.75	4.77	3.61
P2O5	0.25	0.18	0.32	0.14	0.28	0.30	0.21	0.13	0.24
H2O	0.50	1.10	0.60	0.60	0.80	0.70	0.40	0.60	0.70
Q	35.21	32.04	39.68	34.43	34.70	36.14	30.78	35.64	25.22
OR	29.71	29.72	19.13	29.60	29.30	26.00	22.35	28.39	21.68
AB	25.14	28.06	33.31	26.33	26.69	29.62	25.23	27.58	28.61
AN	1.50	1.51	0.00	1.33	0.50	0.02	8.71	0.64	8.83
C	3.29	3.17	4.55	3.20	4.24	4.16	2.87	2.77	3.39
EN	2.34	2.93	1.90	2.63	2.42	2.05	4.21	2.43	4.96
IL	0.09	0.09	0.06	0.09	0.06	0.09	0.17	0.13	0.28
HM	1.90	1.88	0.62	1.90	1.29	1.19	4.60	2.02	5.79
HY	2.34	2.93	1.90	2.63	2.42	2.05	4.21	2.43	4.96
RU	0.25	0.19	0.00	0.17	0.13	0.05	0.58	0.09	0.67
AP	0.59	0.42	0.75	0.33	0.66	0.70	0.49	0.30	0.57
R_Q	39.10	35.67	43.08	38.10	38.26	39.38	39.28	38.90	33.40
R_AB	27.91	31.24	36.16	29.13	29.43	32.28	32.20	30.11	37.88
R_OR	32.99	33.09	20.76	32.76	32.31	28.34	28.52	30.99	28.71
A_CNK	1.23	1.23	1.39	1.25	1.31	1.31	1.19	1.22	1.21
DIFNX	90.05	89.82	92.12	90.36	90.69	91.75	78.35	91.61	75.51
COLNX	4.33	4.89	2.58	4.62	3.78	3.33	8.99	4.58	11.03
XTLNX	3.14	3.56	1.33	3.17	2.20	1.46	11.67	2.34	12.30
BA	355	391	50	438	271	172	628	228	913
RB	239	216	426	221	258	178	142	211	139
SR	58	72	9	73	63	38	143	33	183
HF	3	3	1	2	0	0	6	3	8
ZR	120	95	8	86	56	31	212	79	281
TA	1.6	1.5	11.0	1.7	2.0	1.7	1.1	1.3	1.1
NB	14	10	35	10	11	8	13	5	14
SC	2.7	2.8	1.3	3.4	1.9	2.6	10.0	4.1	13.0
V	6	12	0	15	0	0	59	9	74
LA	32	20	0	20	11	4	36	10	42
Y	19	20	21	23	19	18	33	34	43
GA	17	16	28	15	17	15	17	14	20
TH	22.2	12.0	0.5	10.0	5.3	1.2	14.0	6.1	13.0
U	4.5	4.4	6.0	5.1	7.7	2.0	3.4	3.7	3.3
LI	89	36	14	71	125	27	46	38	60
F	670	345	377	383	316	269	684	297	782
B	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
AS	1.7	2.1	0.6	8.4	4.6	3.2	1.9	11.0	29.0
AU	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
SN	6	0	20	9	11	12	4	7	6
W	0	0	9	3	2	2	0	3	0
CU	0	0	0	0	0	0	0	0	0
PB	0	0	0	0	0	0	0	0	0
ZN	52	40	15	36	52	30	70	33	96

SAMPLE	A11-2270-C	A11-2272-1	A11-2276-1	A11-2280-1	A11-2282	A11-2283	A11-2286	A11-2290	A11-2291
UNIT	DCagap	DCla	DCagSS	DCagSS	DYKE (LUGR)	DCagMD	DCagSS	DCla	DCla
SIO2	63.82	76.29	72.74	68.30	74.54	71.16	67.67	76.50	74.75
TIO2	0.85	0.05	0.32	0.62	0.08	0.36	0.60	0.05	0.11
AL203	16.09	13.54	13.65	14.85	14.29	14.98	15.44	13.29	14.47
FE203	6.36	0.50	2.67	4.43	0.93	2.85	4.30	0.69	1.08
MNO	0.17	0.02	0.08	0.10	0.03	0.08	0.08	0.03	0.03
MGO	2.12	0.68	1.24	1.68	0.79	1.24	2.01	0.70	0.86
CAO	1.74	0.40	1.05	1.80	0.33	0.96	1.25	0.46	0.33
NA20	3.14	3.80	2.98	3.31	3.96	3.42	2.44	3.41	2.92
K20	3.47	4.37	4.18	3.94	4.58	4.38	4.08	4.51	4.26
P205	0.23	0.33	0.16	0.22	0.22	0.21	0.18	0.13	0.27
H20	1.20	0.40	0.30	0.80	0.60	0.70	1.10	0.10	0.50
Q	26.56	36.43	36.08	28.43	32.78	31.29	33.33	37.81	40.53
OR	20.95	25.84	24.96	23.48	27.16	26.00	24.61	26.74	25.43
AB	27.11	32.15	25.45	28.22	33.59	29.04	21.05	28.92	24.93
AN	7.27	0.00	4.20	7.55	0.20	3.40	5.12	1.43	0.00
C	4.65	2.55	2.72	2.41	2.75	3.38	5.27	2.28	5.10
EN	5.39	1.69	3.12	4.22	1.97	3.10	5.11	1.75	2.16
IL	0.37	0.04	0.17	0.22	0.06	0.17	0.17	0.06	0.06
HM	6.49	0.50	2.70	4.46	0.93	2.86	4.39	0.69	1.09
HY	5.39	1.69	3.12	4.22	1.97	3.10	5.11	1.75	2.16
RU	0.67	0.03	0.23	0.51	0.05	0.27	0.52	0.02	0.08
AP	0.54	0.77	0.37	0.51	0.51	0.49	0.43	0.30	0.63
R_Q	35.59	38.58	41.72	35.48	35.05	36.24	42.19	40.46	44.59
R_AB	36.33	34.05	29.43	35.22	35.91	33.64	26.65	30.94	27.43
R_OR	28.07	27.37	28.86	29.31	29.04	30.12	31.16	28.61	27.98
A_CNK	1.33	1.16	1.20	1.14	1.18	1.24	1.44	1.17	1.44
DIFNI	74.61	94.42	86.49	80.12	93.53	86.33	79.00	93.47	90.88
COLNI	12.25	2.24	5.98	8.89	2.97	6.13	9.67	2.50	3.32
XTLNI	11.05	1.19	6.39	10.50	1.58	5.57	8.70	2.66	1.51
BA	744	39	300	541	137	459	564	71	74
RB	135	239	189	152	200	208	168	159	329
SR	181	11	74	136	44	82	133	32	17
HF	8	0	3	6	0	3	4	2	0
ZR	294	12	101	197	27	113	169	19	27
TA	1.4	3.9	1.4	1.4	3.0	1.7	1.4	1.1	5.4
NB	14	7	7	12	8	12	11	0	16
SC	14.0	2.1	5.6	9.3	2.2	6.0	9.3	1.9	1.8
V	97	0	21	54	0	27	74	0	5
LA	45	0	18	29	5	19	33	3	7
Y	46	15	31	32	18	30	25	20	20
GA	17	16	15	16	15	17	19	11	21
TH	15.0	0.0	7.3	12.0	1.9	7.5	16.0	1.9	5.1
U	3.6	3.9	2.9	3.7	7.0	5.8	4.0	5.7	14.0
LI	66	10	68	65	24	79	82	8	51
F	674	252	514	670	262	568	777	136	590
B	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
AS	9.0	2.9	6.7	6.1	3.9	9.4	3.9	7.5	18.0
AU	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
SN	0	16	6	6	5	3	4	1	16
W	0	4	0	0	4	2	1	2	6
CU	7	0	0	0	0	0	0	0	0
PB	267	0	0	0	33	0	0	0	0
ZN	790	43	43	80	50	56	73	18	31

SAMPLE	A11-2292	A11-2293	A11-2296	A11-2300	A11-2301-1	A11-2301-2	A11-2316	A11-3002	A11-3005
UNIT	DCla	DCagWD	DCagSG	DCagLR	DClaED	DClaED	DCagSG	DCgdSG	DCagWD
SIO2	73.33	74.28	70.02	70.32	73.33	74.01	68.65	69.58	74.19
TIO2	0.22	0.16	0.44	0.50	0.12	0.14	0.53	0.51	0.24
AL203	14.05	13.97	14.55	13.97	14.52	14.27	14.96	14.34	13.67
FE203	1.69	1.55	3.35	3.68	1.34	1.46	3.78	3.65	1.60
MNO	0.04	0.05	0.08	0.08	0.05	0.05	0.08	0.07	0.04
MGO	0.99	0.97	1.44	1.52	0.90	0.91	1.53	1.57	1.02
CAO	0.47	0.47	1.40	1.38	0.45	0.41	1.71	1.71	0.60
NA20	3.48	3.25	3.50	2.85	3.77	3.36	3.25	3.14	3.11
K20	4.63	4.75	4.03	3.91	4.50	4.56	4.25	4.06	4.72
P205	0.24	0.17	0.19	0.20	0.32	0.27	0.19	0.18	0.23
H20	0.70	0.60	0.50	0.60	0.60	0.80	0.60	0.60	0.70
Q	33.84	35.34	29.91	34.66	32.99	35.73	28.36	30.63	36.07
OR	27.62	28.20	24.08	23.50	26.81	27.12	25.41	24.30	28.08
AB	29.70	27.60	29.91	24.50	32.12	28.59	27.79	26.89	26.47
AN	0.77	1.22	5.76	5.63	0.14	0.27	7.32	7.39	1.48
C	3.06	3.04	2.36	3.07	3.42	3.73	2.38	2.12	2.92
EN	2.49	2.42	3.62	3.85	2.26	2.28	3.85	3.96	2.55
IL	0.09	0.11	0.17	0.17	0.11	0.11	0.17	0.15	0.09
HM	1.70	1.56	3.38	3.74	1.35	1.47	3.82	3.69	1.61
HY	2.49	2.42	3.62	3.85	2.26	2.28	3.85	3.96	2.55
RU	0.18	0.10	0.35	0.42	0.06	0.08	0.44	0.44	0.20
AP	0.56	0.40	0.45	0.47	0.75	0.63	0.45	0.42	0.54
R_Q	37.12	38.77	35.65	41.93	35.89	39.07	34.77	37.44	39.81
R_AB	32.58	30.28	35.65	29.64	34.95	31.27	34 08	32.86	29.21
R_OR	30.30	30.94	28.70	28.43	29.16	29.66	31.15	29.70	30.99
A_CNK	1.21	1.23	1.15	1.22	1.22	1.27	1.15	1.13	1.21
DIFNX	91.16	91.15	83.90	82.66	91.92	91.44	81.56	81.82	90.62
COLNX	4.28	4.09	7.18	7.76	3.71	3.85	7.85	7.80	4.25
XTLNX	2.51	2.92	8.30	8.32	1.72	1.87	10.02	10.17	3.27
BA	128	202	385	412	275	147	602	561	260
RB	290	258	178	164	253	252	159	148	256
SR	26	43	98	108	40	33	124	130	47
HF	2	2	4	5	0	2	5	4	3
ZR	84	61	137	166	45	52	180	171	90
TA	1.9	1.8	1.7	1.5	2.0	2.0	1.0	1.0	2.0
NB	14	8	11	11	7	8	11	10	12
SC	2.5	3.2	7.7	8.4	2.3	3.2	8.9	8.2	2.0
V	11	11	40	41	6	0	50	51	9
LA	21	10	23	27	7	8	29	29	23
Y	22	23	31	31	19	21	33	32	18
GA	18	15	16	16	15	17	17	18	17
TH	16.0	5.7	8.9	11.0	3.7	4.8	11.0	11.0	17.0
U	4.5	4.2	3.7	3.8	1.7	6.6	4.1	2.0	3.7
LI	117	54	86	66	75	73	57	81	90
F	756	393	543	512	519	369	552	694	785
B	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
AS	1.9	10.0	2.5	1.8	3.3	12.0	2.1	35.0	4.0
AU	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
SN	7	11	2	1	14	12	2	8	2
W	0	4	1	1	5	4	0	1	2
CU	0	0	0	0	0	0	0	0	0
PB	0	0	0	0	0	0	0	0	0
ZN	55	30	62	57	28	28	63	61	55

SAMPLE	A11-3013	A11-3015	A11-3019
UNIT	DCagMD	DCagMD	DCgdSG
SIO2	72.06	73.31	68.83
TIO2	0.23	0.32	0.65
AL203	14.94	13.94	14.18
FE203	1.88	2.13	4.46
MNO	0.04	0.04	0.08
MGO	1.00	0.94	1.69
CAO	0.69	0.70	1.83
NA20	2.95	3.00	2.88
K20	5.07	4.64	3.63
P205	0.23	0.24	0.19
H20	0.50	0.40	0.60
Q	33.46	36.13	32.79
OR	30.26	27.65	21.82
AB	25.19	25.57	24.76
AN	1.94	1.92	7.96
C	3.93	3.31	2.68
EN	2.51	2.36	4.28
IL	0.09	0.09	0.17
HM	1.90	2.15	4.53
HY	2.51	2.36	4.28
RU	0.19	0.28	0.57
AP	0.54	0.56	0.45
R_Q	37.63	40.43	41.31
R_AB	28.33	28.62	31.20
R_OR	34.04	30.95	27.49
A_CNK	1.29	1.24	1.18
DIFNI	88.92	89.35	79.36
COLNI	4.50	4.59	8.98
XTLNI	3.70	3.57	10.96
BA	288	355	546
RB	266	267	154
SR	82	61	136
HF	2	3	6
ZR	90	122	200
TA	1.9	2.0	1.4
NB	13	13	13
SC	2.1	2.6	9.3
V	8	14	63
LA	24	33	32
Y	22	20	28
GA	18	18	17
TH	15.0	24.9	13.0
U	5.8	4.6	4.7
LI	107	119	45
F	780	958	590
B	n.a.	n.a.	n.a.
AS	2.6	2.7	22.0
AU	n.a.	n.a.	n.a.
SN	7	10	7
W	1	1	0
CU	0	0	0
PB	0	0	0
ZN	58	63	77

SAMPLE	A12-1008	A12-1010	A12-1010-2	A12-1010-4	A12-1015	A12-1016	A12-1016-1	A12-1016-4	A12-1016-5
UNIT	DCagSG	DCagSG	DCla	DCla	DCgdL	DCla	DCla	DCla	DCla
SIO2	67.11	68.04	74.36	74.92	65.55	74.66	76.05	74.82	73.59
TIO2	0.61	0.62	0.06	0.05	0.80	0.18	0.05	0.15	0.19
AL203	15.45	15.47	14.49	14.29	15.52	13.61	13.53	13.70	13.99
FE203	4.25	4.31	0.72	0.68	5.44	2.05	1.25	1.81	2.06
MNO	0.08	0.09	0.03	0.03	0.10	0.07	0.05	0.07	0.08
MGO	1.64	1.65	0.78	0.78	1.96	0.90	0.80	0.82	0.89
CAO	1.75	1.62	0.35	0.39	2.36	0.55	0.29	0.47	0.81
NA2O	3.53	3.46	3.94	4.09	3.34	3.16	3.68	3.88	3.61
K2O	4.47	4.04	4.85	4.61	3.60	4.61	4.81	4.54	4.46
P2O5	0.22	0.21	0.19	0.19	0.23	0.13	0.12	0.15	0.14
H2O	0.50	0.70	0.40	0.40	0.55	0.40	0.30	0.50	0.20
Q	24.09	27.23	31.56	32.00	25.30	36.49	34.53	32.92	32.90
OR	26.68	24.01	28.75	27.26	21.50	27.29	28.27	26.74	26.43
AB	30.13	29.42	33.41	34.59	28.57	26.76	[illegible]94	32.69	30.60
AN	7.31	6.70	0.49	0.69	10.32	1.88	0.[illegible]5	1.34	3.11
C	2.17	2.97	2.58	2.31	2.42	2.73	2.01	1.90	2.09
EN	4.12	4.13	1.95	1.94	4.94	2.24	1.98	2.03	2.22
IL	0.17	0.19	0.06	0.06	0.23	0.15	0.09	0.15	0.17
HM	4.29	4.33	0.72	0.68	5.50	2.05	1.23	1.80	2.06
HY	4.12	4.13	1.95	1.94	4.94	2.24	1.98	2.03	2.22
RU	0.52	0.52	0.03	0.02	0.68	0.10	0.00	0.07	0.10
AP	0.51	0.49	0.44	0.44	0.53	0.30	0.28	0.35	0.33
R_Q	29.78	33.76	33.67	34.09	33.58	40.31	36.83	35.64	36.58
R_AB	37.25	36.47	35.65	36.86	37.89	29.55	33.01	35.40	34.03
R_OR	32.97	29.77	30.68	29.05	28.54	30.14	30.16	28.96	29.39
A_CNK	1.12	1.19	1.17	1.15	1.14	1.22	1.15	1.13	1.14
DIFNX	80.91	80.67	93.73	93.85	75.38	90.54	93.74	92.36	89.92
COLNX	8.58	8.65	2.73	2.69	10.67	4.44	3.32	3.99	4.46
XTLNX	10.19	9.59	1.86	2.05	13.79	3.45	2.04	2.77	4.66
BA	818	614	144	82	809	269	25	218	268
RB	154	164	173	157	142	248	258	235	230
SR	145	134	37	22	169	40	9	39	53
HF	6	6	1	1	6	2	0	2	3
ZR	198	205	38	31	254	89	32	83	94
TA	1.5	1.6	2.1	1.8	1.0	1.5	1.5	1.8	1.8
NB	13	12	7	5	14	8	6	10	9
SC	8.3	9.2	1.8	1.6	12.0	4.6	3.2	4.1	4.5
V	50	53	0	0	76	10	0	6	10
LA	30	32	3	2	39	13	3	11	13
Y	38	33	16	13	38	35	21	31	31
GA	19	18	16	17	20	18	16	18	17
TH	13.0	12.0	1.8	1.4	14.0	5.9	2.4	5.2	5.9
U	2.7	2.5	8.7	17.0	2.5	3.3	3.4	7.6	2.9
LI	40	51	11	8	45	77	38	52	94
F	523	473	139	114	625	434	269	264	501
B	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
AS	19.0	19.0	38.0	46.0	2.1	6.9	4.6	6.8	5.1
AU	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
SN	3	7	6	5	0	5	8	5	6
W	1	4	4	3	0	3	4	3	2
CU	0	0	0	0	5	0	0	0	0
PB	0	0	30	18	0	26	0	24	31
ZN	65	61	24	16	82	39	27	30	34

SAMPLE	A12-1016-6	A12-1019	A12-1019-2	A12-1020-1	A12-8002-1	A12-8007	A12-8008	A12-8017
UNIT	DCla	DCla	DCla	DCagSG	DCagSG	DCgdL	DCagSG	DCagSG
SIO2	74.57	74.23	73.60	67.03	65.79	65.04	66.85	69.23
TIO2	0.18	0.07	0.10	0.65	0.82	0.80	0.73	0.60
AL2O3	13.61	14.38	14.18	15.68	15.43	15.58	15.42	14.76
FE2O3	2.01	0.98	1.28	4.27	5.75	5.84	4.85	4.13
MNO	0.07	0.04	0.05	0.08	0.10	0.12	0.09	0.08
MGO	0.95	0.86	0.92	1.64	1.97	1.95	1.73	1.62
CAO	0.50	0.50	0.48	2.23	2.27	2.41	2.00	1.47
NA2O	3.16	3.70	4.12	3.66	3.60	3.55	3.48	2.94
K2O	4.70	5.28	5.06	4.04	3.70	3.51	3.90	4.05
P2O5	0.12	0.24	0.25	0.20	0.23	0.24	0.23	0.18
H2O	0.70	0.40	0.30	0.60	0.40	0.40	0.40	0.80
Q	36.08	30.72	28.55	23.73	23.66	23.78	25.64	31.86
OR	27.84	31.14	29.92	24.02	21.97	20.96	23.24	24.18
AB	26.77	31.22	34.84	31.13	30.52	30.33	29.66	25.11
AN	1.70	0.91	0.74	9.80	9.77	10.49	8.48	6.17
C	2.70	2.23	1.65	1.72	1.95	2.15	2.40	3.33
EN	2.37	2.14	2.29	4.11	4.91	4.90	4.34	4.07
IL	0.15	0.09	0.11	0.17	0.23	0.26	0.19	0.17
HM	2.01	0.98	1.28	4.29	5.77	5.90	4.89	4.17
HY	2.37	2.14	2.29	4.11	4.91	4.90	4.34	4.07
RU	0.10	0.02	0.04	0.56	0.70	0.67	0.63	0.51
AP	0.28	0.56	0.58	0.47	0.54	0.56	0.54	0.42
R_Q	39.79	33.00	30.59	30.08	31.07	31.68	32.65	39.26
R_AB	29.52	33.54	37.34	39.46	40.08	40.40	37.76	30.94
R_OR	30.69	33.46	32.06	30.45	28.85	27.92	29.59	29.80
A_CNK	1.22	1.13	1.08	1.09	1.10	1.11	1.14	1.24
DIFNX	90.69	93.08	93.31	78.88	76.15	75.07	78.53	81.15
COLNX	4.53	3.20	3.68	8.57	10.90	11.06	9.42	8.41
XTLNX	3.36	2.40	2.35	12.68	13.21	13.92	11.52	9.03
BA	273	306	292	980	830	737	819	591
RB	220	153	152	132	144	143	137	162
SR	39	97	111	176	163	175	159	126
HF	3	0	0	6	7	7	7	5
ZR	88	45	58	218	258	283	230	192
TA	1.3	0.9	0.8	1.1	1.6	1.3	1.3	1.4
NB	8	5	6	13	14	16	13	13
SC	4.4	1.8	3.0	10.0	14.0	14.0	10.0	9.2
V	8	0	0	55	80	60	61	50
LA	11	4	8	34	44	42	34	29
Y	29	16	21	31	38	43	39	33
GA	17	13	12	18	19	21	21	20
TH	5.9	1.0	1.8	12.0	14.0	14.0	13.0	12.0
U	4.4	1.5	1.7	3.2	4.1	3.4	2.2	2.8
LI	65	12	13	37	66	60	38	50
F	295	163	182	567	704	709	570	480
B	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
AS	3.6	31.0	104.0	3.0	16.0	24.0	3.5	3.4
AU	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
SN	1	2	0	3	0	0	0	1
W	7	3	10	0	0	0	0	0
CU	0	0	0	0	0	0	0	0
PB	15	30	29	0	0	0	22	37
ZN	33	21	27	62	85	84	71	59

21A/14

SAMPLE	A14-0001	A14-0002	A14-0002-1	A14-0003	A14-0007	A14-0007-1	A14-0008	A14-1006	A14-1006-1
UNIT	DCagCL	DCagCL	DCagCL	DCagCL	DCagWD	DCagWD	DCagCL	GREI	GREI
SIO2	69.74	68.97	69.28	69.44	70.32	71.55	69.58	75.38	75.23
TIO2	0.45	0.51	0.51	0.58	0.34	0.35	0.50	0.03	0.04
AL203	14.79	15.31	14.95	14.71	15.59	14.89	14.83	13.72	13.53
FE203	3.70	4.00	4.02	4.47	2.37	2.44	4.07	1.15	1.30
MNO	0.09	0.09	0.09	0.09	0.05	0.04	0.10	0.05	0.07
MGO	1.39	1.51	1.33	1.68	1.28	1.27	1.36	0.73	0.87
CAO	1.35	1.66	1.59	1.72	0.88	0.79	1.46	0.28	0.22
NA2O	3.38	2.57	3.24	2.65	3.09	2.89	3.52	4.31	4.09
K2O	4.15	4.02	4.20	3.98	5.49	5.10	4.05	4.19	4.54
P2O5	0.18	0.20	0.20	0.19	0.21	0.20	0.18	0.16	0.15
H2O	0.70	0.60	0.40	0.10	0.70	0.70	0.40	0.40	0.40
Q	29.96	33.77	29.69	33.29	28.22	32.34	29.04	33.02	32.69
OR	24.74	24.06	24.99	23.66	32.60	30.31	24.04	24.78	26.84
AB	28.82	22.00	27.58	22.53	26.24	24.57	29.89	36.47	34.59
AN	5.56	7.01	6.62	7.33	3.00	2.62	6.09	0.34	0.11
C	2.73	4.24	2.67	3.38	3.48	3.67	2.44	1.97	1.84
EN	3.49	3.80	3.33	4.20	3.20	3.18	3.40	1.82	2.17
IL	0.19	0.19	0.19	0.19	0.11	0.09	0.21	0.06	0.08
HM	3.73	4.05	4.04	4.49	2.38	2.45	4.08	1.10	1.22
HY	3.49	3.80	3.33	4.20	3.20	3.18	3.40	1.82	2.17
RU	0.35	0.41	0.41	0.48	0.28	0.31	0.39	0.00	0.00
AP	0.42	0.47	0.47	0.44	0.49	0.47	0.42	0.37	0.35
R_Q	35.87	42.30	36.10	41.88	32.42	37.08	35.01	35.03	34.73
R_AB	34.51	27.56	33.52	28.35	30.14	28.17	36.02	38.68	36.75
R_OR	29.62	30.14	30.38	29.77	37.44	34.75	28.97	26.29	28.52
A_CNK	1.18	1.32	1.17	1.25	1.23	1.27	1.16	1.13	1.12
DIFNX	83.52	79.83	82.26	79.48	87.06	87.22	82.97	94.27	94.12
COLNX	7.41	8.05	7.57	8.89	5.69	5.72	7.70	3.05	3.58
XTLNX	8.01	9.67	8.95	10.27	5.24	4.85	8.47	1.62	1.63
BA	487	565	606	604	497	467	595	123	23
RB	187	172	169	173	258	245	175	286	307
SR	119	123	127	134	94	87	127	20	12
HF	7	8	9	8	5	6	7	2	2
ZR	173	196	202	211	132	143	194	45	44
TA	1.5	1.2	1.2	1.1	1.3	1.4	1.2	2.2	1.8
NB	12	11	13	15	14	14	14	6	7
SC	7.5	9.1	10.0	9.3	4.0	4.3	9.0	2.9	3.1
V	30	33	33	39	17	15	30	0	0
LA	31	35	38	34	34	40	34	3	4
Y	42	38	42	39	23	20	37	20	26
GA	16	16	17	18	21	19	16	18	16
TH	13.0	13.0	14.0	12.0	19.0	23.2	12.0	4.3	4.3
U	3.8	3.5	3.2	3.3	4.2	4.5	3.7	4.5	4.8
LI	59	59	53	62	70	65	58	21	57
F	695	633	570	698	375	618	566	160	317
B	1	2	1	3	1	2	1	2	2
AS	9.0	2.1	2.1	30.0	4.3	3.5	2.0	17.0	7.3
AU	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
SN	13	7	2	11	4	3	10	0	0
W	0	3	1	1	0	2	3	4	4
CU	0	0	0	0	0	0	0	0	0
PB	12	12	16	23	23	34	16	50	31
ZN	56	61	66	61	59	60	54	36	43

SAMPLE	A14-1007	A14-1018	A14-1018-1	A14-1019	A14-1020	A14-1020-1	A14-1021	A14-1030	A14-1032
UNIT	GREI	DCleMR	DCleMR	DCleMR	DCleBU	DCleBU	DCagSG	DCagCL	DCagSG
SIO2	75.16	72.11	71.62	72.12	73.04	72.83	71.13	70.22	69.24
TIO2	0.04	0.23	0.27	0.33	0.24	0.26	0.40	0.43	0.62
AL2O3	13.76	14.99	15.30	14.76	14.27	14.52	14.65	14.66	14.56
FE2O3	1.18	1.87	1.92	2.22	1.75	2.04	3.04	3.55	4.37
MNO	0.08	0.04	0.04	0.05	0.04	0.05	0.06	0.08	0.06
MGO	0.79	1.02	1.12	1.12	1.08	1.37	1.38	1.21	1.67
CAO	0.25	0.63	0.68	0.68	0.60	0.80	1.30	1.50	1.71
NA2O	3.82	3.29	2.98	3.17	3.35	3.14	2.62	3.48	2.77
K2O	4.48	5.23	5.56	4.86	5.04	4.89	4.74	4.27	3.69
P2O5	0.12	0.20	0.21	0.22	0.19	0.15	0.15	0.18	0.24
H2O	0.80	0.60	0.50	0.60	0.50	0.60	0.50	0.20	0.30
Q	34.51	30.75	30.48	32.71	32.02	32.48	33.49	29.23	33.88
OR	26.58	31.06	32.92	28.88	29.93	28.91	28.19	25.36	22.06
AB	32.42	27.94	25.24	26.95	28.46	26.55	22.29	29.57	23.69
AN	0.46	1.82	2.00	1.94	1.74	2.99	5.50	6.29	6.99
C	2.46	3.26	3.85	3.59	2.67	2.96	3.22	2.02	3.51
EN	1.97	2.55	2.79	2.80	2.70	3.41	3.45	3.03	4.20
IL	0.08	0.09	0.09	0.11	0.09	0.11	0.13	0.17	0.13
HM	1.08	1.88	1.92	2.23	1.76	2.04	3.06	3.56	4.42
HY	1.97	2.55	2.79	2.80	2.70	3.41	3.45	3.03	4.20
RU	0.00	0.19	0.23	0.27	0.20	0.20	0.33	0.34	0.56
AP	0.28	0.47	0.49	0.51	0.44	0.35	0.35	0.42	0.56
R_Q	36.90	34.26	34.39	36.94	35.41	36.94	39.89	34.73	42.55
R_AB	34.67	31.14	28.47	30.43	31.48	30.19	26.54	35.13	29.75
R_OR	28.43	34.60	37.14	32.62	33.11	32.87	33.57	30.14	27.71
A_CNK	1.19	1.23	1.28	1.26	1.18	1.22	1.24	1.12	1.25
DIFNX	93.52	89.75	88.64	88.54	90.40	87.95	83.96	84.16	79.63
COLNX	3.28	4.51	4.80	5.14	4.54	5.56	6.64	6.76	8.75
XTLNX	1.84	3.61	3.96	3.91	3.63	5.38	7.92	8.41	9.93
BA	22	368	445	361	400	351	526	519	561
RB	283	279	262	262	230	204	162	182	163
SR	11	74	88	75	82	78	117	112	128
HF	2	4	4	4	4	4	5	6	8
ZR	43	99	114	138	107	103	137	186	190
TA	1.8	1.9	1.2	1.7	1.4	1.2	1.0	1.0	1.4
NB	8	14	12	15	12	10	10	11	16
SC	3.2	3.0	3.5	3.8	2.9	3.8	6.6	7.2	9.4
V	0	8	12	12	12	18	29	29	50
LA	4	24	27	31	26	22	26	31	35
Y	23	22	23	24	23	24	33	41	38
GA	18	19	18	19	15	17	14	19	18
TH	4.2	14.0	16.0	19.0	15.0	11.0	11.0	12.0	14.0
U	4.8	4.1	4.3	7.0	6.3	4.3	3.2	3.5	4.5
LI	41	83	57	93	74	84	52	62	58
F	120	487	545	653	392	565	449	628	334
B	2	1	2	1	1	1	1	n.a.	1
AS	17.0	5.4	4.3	7.4	3.8	4.6	2.4	1.5	2.7
AU	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
SN	0	2	9	11	5	2	9	5	6
W	1	0	0	0	0	0	0	1	1
CU	0	0	0	0	0	0	0	0	0
PB	41	37	17	25	21	25	14	0	12
ZN	21	55	53	56	42	43	46	56	70

SAMPLE	A14-1040	A14-C001	A14-C002	A14-C002A	A14-C003	A14-C004	A14-C005	A14-C006	A14-C006A
UNIT	DClaI	GREI	GREI	GREI	GREI	GREI	GREI	GREI	GREI
SIO2	76.25	85.78	87.58	75.64	85.43	76.10	76.63	76.46	69.68
TIO2	0.06	0.04	0.03	0.03	0.04	0.04	0.02	0.03	0.38
AL203	13.47	7.02	7.28	13.62	8.47	13.74	13.97	13.61	14.76
FE203	1.20	3.47	2.50	1.30	2.19	0.98	1.81	2.29	3.38
MNO	0.07	0.17	0.08	0.06	0.09	0.02	0.04	0.03	0.09
MGO	0.82	0.70	0.84	0.77	0.83	0.87	1.06	0.79	1.43
CAO	0.23	0.01	0.00	0.24	0.00	0.37	0.19	0.27	1.19
NA2O	3.13	0.87	0.66	3.80	1.08	3.59	1.31	4.41	4.11
K2O	4.62	1.05	0.95	4.22	1.51	3.54	3.85	2.00	4.31
P2O5	0.16	0.05	0.03	0.14	0.03	0.14	0.15	0.14	0.18
H2O	0.40	1.10	0.70	0.40	1.20	0.40	1.80	1.00	0.70
Q	39.08	76.25	78.86	36.17	72.34	40.21	53.19	41.78	25.21
OR	27.32	6.26	5.62	25.01	8.96	21.07	22.99	11.83	25.62
AB	26.48	7.42	5.58	32.21	9.16	30.56	11.19	37.30	34.94
AN	0.09	0.00	0.00	0.27	0.00	0.92	0.00	0.42	4.75
C	3.28	4.49	5.17	2.70	5.07	3.69	7.72	4.03	1.61
EN	2.04	1.76	2.09	1.92	2.07	2.18	2.67	1.97	3.58
IL	0.11	0.08	0.06	0.06	0.08	0.04	0.04	0.06	0.19
HM	1.16	3.19	2.38	1.23	2.07	0.99	1.78	2.28	3.40
HY	2.04	1.76	2.09	1.92	2.07	2.18	2.67	1.97	3.58
RU	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.28
AP	0.37	0.12	0.07	0.33	0.07	0.33	0.35	0.32	0.42
R_Q	42.07	84.79	87.56	38.73	79.97	43.78	60.88	45.96	29.39
R_AB	28.51	8.25	6.20	34.49	10.13	33.28	12.81	41.03	40.74
R_OR	29.42	6.96	6.24	26.78	9.90	22.94	26.32	13.01	29.87
A_CNK	1.27	2.71	3.44	1.21	2.48	1.32	2.10	1.37	1.09
DIFNX	92.88	89.93	90.06	93.38	90.46	91.84	87.38	90.90	85.78
COLNX	3.37	5.47	4.70	3.31	4.40	3.21	4.55	4.32	7.17
XTLNX	1.52	1.23	1.47	1.62	1.45	2.45	1.87	1.80	7.26
BA	72	17	5	36	17	67	78	59	439
RB	276	163	119	288	201	213	268	136	233
SR	10	5	10	13	21	39	7	41	109
HF	2	0	0	2	0	1	1	0	4
ZR	40	36	36	39	37	46	41	46	136
TA	1.3	11.0	9.3	1.7	3.3	1.7	1.3	0.7	1.1
NB	7	19	21	5	12	7	6	0	9
SC	3.1	7.8	7.0	2.4	5.1	3.5	2.4	1.7	6.7
V	0	0	0	0	5	16	7	0	24
LA	4	0	0	4	0	5	0	2	26
Y	20	10	11	24	13	20	17	14	27
GA	16	17	15	16	19	19	24	18	19
TH	3.0	3.7	3.8	3.9	3.8	4.2	3.1	4.8	13.0
U	1.6	20.0	11.0	7.8	10.0	13.0	6.0	39.8	2.5
LI	106	118	62	21	74	19	38	21	113
F	327	806	554	63	630	177	341	255	291
B	4	3	307	3	3	3	5	3	2
AS	8.6	227.0	79.8	8.4	184.0	22.0	11.0	171.0	2.7
AU	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
SN	11	0	0	0	0	0	0	0	0
W	5	425	143	3	90	8	14	11	2
CU	0	0	0	0	0	52	0	49	0
PB	17	0	13	15	11	48	149	62	0
ZN	25	27	60	51	19	25	114	29	66

SAMPLE	A14-C007	A14-C008	A14-C009	A14-C009A	A14-C010	A14-C011	A14-C012	A14-C013	A14-C014
UNIT	GREI	GREI	GREI	GREI	GREI	GREI	GREI	GREI	GREI
SIO2	75.19	76.40	76.12	85.53	74.39	74.40	75.86	75.48	75.10
TIO2	0.04	0.04	0.04	0.05	0.04	0.03	0.04	0.03	0.04
AL203	13.33	13.60	13.91	8.47	13.60	13.94	13.95	13.48	13.79
FE203	1.74	1.59	0.84	2.20	1.18	1.37	1.14	1.31	1.09
MNO	0.04	0.02	0.02	0.09	0.05	0.04	0.03	0.06	0.03
MGO	0.77	0.80	0.67	0.78	0.90	0.74	0.62	0.87	0.88
CAO	0.23	0.18	0.33	0.00	0.29	0.26	0.24	0.24	0.27
NA2O	3.41	3.60	3.75	0.70	4.16	4.03	3.95	3.95	4.14
K2O	4.34	3.05	4.40	1.49	4.39	4.05	3.87	4.21	4.32
P2O5	0.15	0.10	0.19	0.03	0.16	0.20	0.18	0.15	0.15
H2O	0.80	0.70	0.60	1.50	0.80	0.70	0.50	0.30	0.30
Q	37.80	42.75	36.19	75.05	32.13	34.67	37.17	35.07	33.07
OR	25.87	18.15	25.96	8.87	26.19	24.18	22.92	24.96	25.60
AB	29.07	30.65	31.64	5.96	35.49	34.42	33.46	33.49	35.09
AN	0.16	0.24	0.39	0.00	0.39	0.00	0.01	0.21	0.36
C	2.98	4.31	2.82	5.74	1.87	2.95	3.26	2.35	2.17
EN	1.93	2.00	1.66	1.95	2.26	1.86	1.55	2.17	2.20
IL	0.08	0.04	0.04	0.10	0.08	0.06	0.06	0.06	0.06
HM	1.74	1.60	0.84	2.11	1.16	1.35	1.14	1.24	1.09
HY	1.93	2.00	1.66	1.95	2.26	1.86	1.55	2.17	2.20
RU	0.00	0.02	0.02	0.00	0.00	0.00	0.01	0.00	0.01
AP	0.35	0.23	0.44	0.07	0.37	0.47	0.42	0.35	0.35
R_Q	40.76	46.69	38.58	83.50	34.25	37.17	39.74	37.50	35.27
R_AB	31.35	33.48	33.74	6.63	37.83	36.90	35.77	35.82	37.43
R_OR	27.89	19.83	27.68	9.87	27.91	25.93	24.50	26.69	27.30
A_CNK	1.24	1.42	1.21	3.06	1.12	1.21	1.25	1.17	1.15
DIFNX	92.74	91.55	93.78	89.88	93.82	93.27	93.55	93.52	93.76
COLNX	3.77	3.65	2.54	4.31	3.54	3.31	2.75	3.58	3.35
XTLNX	1.51	1.64	1.56	1.37	1.98	1.30	1.10	1.73	1.90
BA	44	56	59	12	18	26	22	32	31
RB	247	189	246	200	273	288	279	288	271
SR	13	36	47	21	14	21	25	12	14
HF	2	2	2	0	1	1	1	1	1
ZR	43	45	44	35	45	43	45	40	43
TA	2.1	2.3	2.1	3.1	1.9	2.7	2.3	1.6	1.9
NB	7	7	8	12	9	10	10	6	7
SC	3.8	4.0	3.3	5.2	3.7	3.7	3.9	2.5	3.3
V	0	10	5	0	0	0	0	0	0
LA	3	3	4	0	4	2	3	3	3
Y	22	18	22	13	24	22	23	24	22
GA	20	16	16	21	17	18	19	16	17
TH	5.0	4.2	4.7	3.8	4.6	3.7	3.9	3.6	4.1
U	38.6	17.0	43.8	10.0	14.0	15.0	18.0	7.2	14.0
LI	18	24	9	70	25	12	9	18	15
F	118	292	121	706	68	67	119	105	136
B	2	2	1	3	2	3	3	1	2
AS	17.0	17.0	31.0	182.0	14.0	29.0	65.2	7.2	8.6
AU	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
SN	0	0	0	0	0	0	0	0	0
W	6	10	4	88	3	7	4	3	4
CU	38	0	28	0	0	0	65	0	0
PB	38	46	46	26	17	17	22	37	43
ZN	38	18	16	20	19	15	15	50	21

SAMPLE	A14-C015	A14-C016	A14-C016A	A14-C017	A14-C017A	A14-C018
UNIT	GREI	GREI	GREI	GREI	GREI	GREI
SIO2	97.59	79.09	70.16	91.92	89.16	90.32
TIO2	0.02	0.02	0.38	0.04	0.04	0.04
AL2O3	1.61	11.83	14.83	4.53	5.89	5.41
FE2O3	0.75	1.27	3.25	1.43	2.43	2.50
MNO	0.02	0.04	0.09	0.06	0.07	0.05
MGO	0.72	0.77	1.44	0.80	0.82	0.74
CAO	0.00	0.24	1.18	0.00	0.00	0.00
NA2O	0.62	4.21	3.81	1.01	0.92	0.63
K2O	0.24	2.18	4.32	0.65	0.40	0.28
P2O5	0.02	0.17	0.19	0.03	0.02	0.02
H2O	0.20	0.20	1.40	0.70	0.90	0.20
Q	90.53	45.15	27.41	81.94	81.24	84.47
OR	1.40	12.92	25.64	3.83	2.37	1.66
AB	5.16	35.68	32.35	8.50	7.80	5.33
AN	0.00	0.08	4.63	0.00	0.00	0.00
C	0.32	2.52	2.20	2.15	3.95	4.07
EN	1.76	1.92	3.60	1.98	2.05	1.84
IL	0.04	0.04	0.19	0.08	0.08	0.08
HM	0.73	1.22	3.26	1.37	2.36	2.47
HY	1.76	1.92	3.60	1.98	2.05	1.84
RU	0.00	0.00	0.28	0.00	0.00	0.00
AP	0.05	0.40	0.44	0.07	0.05	0.05
R_Q	93.24	48.16	32.09	86.92	88.87	92.36
R_AB	5.32	38.06	37.88	9.02	8.53	5.83
R_OR	1.44	13.78	30.03	4.06	2.59	1.81
A_CNK	1.26	1.22	1.13	1.92	3.03	4.04
DIFNI	97.09	93.75	85.40	94.27	91.41	91.45
COLNI	2.54	3.25	7.05	3.51	4.59	4.43
XTLNI	1.24	1.42	7.15	1.39	1.43	1.29
BA	8	23	429	17	13	6
RB	62	119	234	95	75	40
SR	0	10	110	5	0	0
HF	0	2	4	0	0	0
ZR	39	48	135	32	37	32
TA	10.0	1.1	1.2	2.3	9.2	2.1
NB	27	0	11	9	34	10
SC	4.8	1.7	6.2	2.7	5.0	3.6
V	5	0	27	0	5	0
LA	0	0	25	0	0	0
Y	0	13	29	8	0	0
GA	6	14	18	12	12	9
TH	3.6	3.2	13.0	2.7	2.9	3.5
U	17.0	4.7	2.9	7.2	20.2	11.0
LI	11	7	120	51	32	21
F	258	348	364	410	588	516
B	16	214	2	3	334	394
AS	126.0	6.9	3.0	93.6	111.0	47.0
AU	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
SN	0	0	0	0	0	0
W	708	2	2	64	410	105
CU	0	0	0	0	0	0
PB	75	0	18	16	39	0
ZN	12	43	68	13	46	63

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